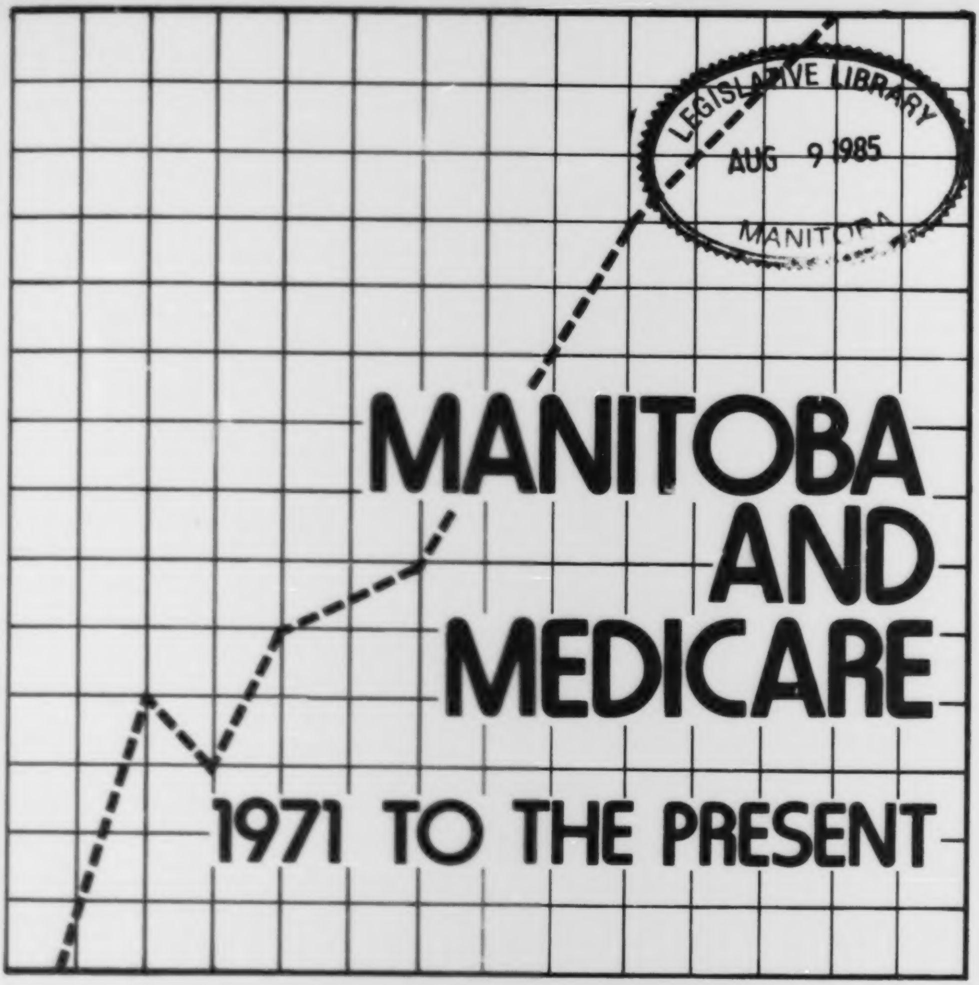

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MANITOBA AND MEDICARE

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MANITOBA AND MEDICARE

1971 TO THE PRESENT

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EXECUTIVE SUMMARY

Introduction

In the beginning of the 1970's the population of Manitoba was approximately one million and remained at or very near that number for a period of a decade. While other provinces were reacting dramatically to the economic expansion of the mid and late 1970's, Manitoba's population and economic expansion remained relatively stable. Against this stability of population and economics was a dramatic increase in health care expenditures. Far in excess of the rate of inflation, the budget of the Manitoba Health Services Commission expanded at an average annual rate of 12.98% throughout this period of time. Per capita funding for health services approximated the Canadian average and due to slower economic growth, consumed proportionately more of the Provincial Gross Domestic Product than the other Western Canadian provinces.

Another factor which occurred during this same period was a significant increase in the number of practicing physicians. Over the period of a decade there was a 25% increase in the practicing physician-to-population ratio. Of greater interest was the fact that the increase was experienced almost entirely within the City of Winnipeg with relatively little change in the physician-to-population ratio in Brandon or in rural Manitoba. Winnipeg is of particular interest as the ratio of general practitioners-to-population increased by 56% while the increase in specialists was up 22%. Given a relatively unchanged population and the continued increase in the number of practicing physicians in Winnipeg, one would have expected that general practitioner physicians would have experienced difficulty in generating gross revenues equivalent to their counterparts practicing in 1971. Such was not the case. In aggregate, adjusting for fee schedule increases, there was little significant difference between the gross revenues generated by a physician in 1971/72 versus the gross revenue generated by a physician in 1981/82. Thus during this period of time, a form of a natural experiment occurred. The population of Manitoba remained relatively unchanged, the number of practicing physicians increased, but the gross revenues of physicians after adjusting for fee schedule increases remained relatively constant. Of particular interest are the modes of practice employed by physicians, whether general practitioners or specialists, and whether they practiced as solo practitioners or within a group practice setting. The changing patterns of practice of medical practitioners was examined as it occurred in Winnipeg, Brandon and rural Manitoba. In order to appreciate the changes in service provision a description is provided of the behaviour of general practitioners and specialists according to their method of practice as solo practitioners or group practitioners. Three focal points form the basis of discussion. These are the years 1971/72, 1976/77, and 1981/82 upon which comparisons of practice patterns are made. The first section comprises Chapters I-IV which places health care spending in Manitoba into context with the Canadian situation. The second section describes physician practice patterns in Chapters V-VIII. Chapter V presents a general description of medical services as received by residents of Manitoba. Chapter VI breaks into considerable detail the practice patterns of physicians by type of practice and method of service delivery. Chapters VII and VIII describe hospital utilization in Manitoba and comparisons within specific geographical districts of the province. The third section provides a comparison of the Manitoba health care system to that of one type of a prepaid group insurance plan known as a Health Maintenance Organization which provides health services for approximately 20 million Americans.

Historical Overview

Universal health insurance in Canada, in the form of insured hospital and medical services, was introduced through federal legislation in 1958 and 1968 respectively. Insured hospital services began in Manitoba in 1958 and insured medical services followed in line with the majority of Canadian provinces in 1969. Historically, Manitoba's per capita spending on health care has approximated the Canadian average with very little variance over the past 15 years. Although per capita spending in Manitoba has remained close to the Canadian average, spending on health services consumes a larger proportion of the Provincial Gross Domestic Product than in the other western provinces.

By all accounts, insured health services in Manitoba and in Canada are a success. Comparative standards in the United States and Western European countries suggest that Manitobans and Canadians experience a universal level and quality of health services that are virtually unparalleled. By all international standards such as infant mortality rates and longevity of life, Manitobans and Canadians are served well by their health insurance system.

Set against this backdrop of universal health services are two factors which provide support to the argument that the universality of health care in Canada may be in jeopardy. These two factors are: a recognition of the stress currently being experienced over the argument of underfunding of the health service system and the perceived cost breakout which is witnessed in the steadily increasing proportion of the Gross National Product being channelled into the financing of health services. With regard to this latter point, health spending in Canada during the 1970's remained at relatively stable levels whereas in the early 1980's the cost breakout has seen health spending surpass the 8% level as a percentage of the Gross National Product.

Falling against this are points of particular interest. These take the form of Manitoba's introduction of insured health services beyond the base of medical and hospital care experienced elsewhere in Canada. In addition to the insuring of pharmacare services, chiropractor services, orthotic and prosthetic services, and eye glasses for the elderly, was the introduction of two major programs, the insured personal care home program and continuing care program.

The insured personal care home program was introduced in Manitoba in 1973. People who qualify for nursing home care are categorized by one of four levels of need and, if placed in a personal care home, have the majority of expenses paid by the insured program. Residents of a personal care home subsidize care by a per diem charge. To augment the insured personal care home program, an insured continuing care program was introduced in 1974. The purpose of this program was to provide services in the homes of individuals thus prolonging stay out of institutions or to facilitate early discharge from a health facility.

In summary, Manitoba, like its provincial counterparts, followed close upon the federal legislation by introducing insured hospital services in 1958 and insured medical services in 1969. Throughout this period, Manitoba's per capita commitment for health services has paralleled the national average. Of particular interest, however, is the fact that although Manitoba spent proportionately the same as the Canadian average for health services, spending differed from that of the national trend with a commitment to a level of institutional health care funding beyond that of the national average.

Health Care Costs 1971-1982/83 - A General Overview

In 1982/83, spending in Manitoba for health services as a proportion of the Provincial Gross Domestic Product was 16% above that of the national average. Much of the increase in health costs over the period in question is attributable to general inflation. However, after having adjusted for inflation by use of the Gross National Expenditure deflator, health care costs in Manitoba rose 3% per year for ten years in constant dollar terms. Thus, increases in public sector funding for health services surpassed increases in the general inflation rate.

Although per capita health spending in Manitoba has approximated the national average, Manitoba's distribution of expenditures has differed from the national average due to relatively greater emphasis on the funding of institutional health services. In 1971 per capita spending on institutional health services in Manitoba was 5% below the Canadian average. By 1982 per capita spending on institutions had risen to 10% above that of the Canadian average. Most notable within this sector of institutional health funding was the commitment to the funding of personal care homes. This commitment to the support of long-term care facilities was experienced both in Manitoba and across Canada. During the period of 1971-1982, cross Canada per capita spending in support of personal care homes increased by 19.3% per year while the Manitoba experience over the same period of time was 23.5%. Thus the Manitoba per capita commitment in support of personal care homes exceeded the Canadian average by over one-third by the end of 1982.

With this commitment to the funding of personal care homes, one could have expected a concurrent reduction in the expenditures in support of the hospital system when compared to the Canadian experience at large. Part of the philosophy in insuring personal care homes was the belief that adequate numbers of personal care homes would decrease the pressure on acute hospitals. An examination of the financial support of hospitals in Manitoba over this period of time does not support this belief.

While the per capita commitment to spending on personal care homes increased during this decade, so did the per capita expenditures to support the hospital system. Costs per patient day in Manitoba hospitals and costs per separation were both up during this period of time. Costs per patient day in Manitoba hospitals (acute and extended care) adjusted for inflation increased by 30.91% during the period of 1976 to 1982 or twice the national average rate of 14.60%. In 1982/83, costs per patient day in teaching hospitals were 13.18% above the national average while utilization was 21.07% above, yielding total differences in per capita cost of 37.03%. After adjusting for inflation, per capita costs in teaching hospitals in Manitoba rose 114.03% during the period of 1971 to 1982/83 while across Canada per capita costs were only up 53.37% or less than half that which was experienced in Manitoba. Costs per patient day were also up in non-teaching general hospitals. During 1971-1982/83, per capita costs in Manitoba non-teaching hospitals rose 62.31% after adjusting for inflation while the Canadian experience saw an increase of only 35.74%. Thus, per capita costs of Manitoba non-teaching hospitals rose 74.34% faster than comparable non-teaching hospitals across Canada and per capita costs of Manitoba teaching hospitals rose 113.66% faster than the national experience.

In total, Manitoba public general hospital costs per patient day in 1982/83 were 7.76% above the Canadian average with a utilization rate 4.39% above the national average for a total cost per capita of 12.49% above the national average. Thus Manitoba's hospital system costs as much without a long-term care section as the rest of the country's does with one. Personal care homes are thus a pure add-on.

Increased costs in the Manitoba institutional sector can be broken down further with an examination of the paid hours per patient day.

Across all hospitals in Manitoba, the paid hours per patient day in 1982/83 were 23.6% greater than the Canadian experience. When considering only the teaching hospitals during this fiscal period, paid hours per patient day in the teaching hospitals were 21.6% greater than the national average, but paid hours per capita were 47.2% greater than the national average. In summary, wage costs per patient day in all hospitals in Manitoba were 14.56% higher than the national average, while non-wage costs per patient day were 19.64% greater than the national average.

Physician Practice Patterns 1971/72-1981/82

During this period of a decade physician-to-population ratios remained relatively unchanged in Brandon and in rural Manitoba but increased dramatically in Winnipeg. As cited earlier, the physician-to-population ratio amongst general practitioners increased 56% in Winnipeg and for specialists, 22%. It will be recalled that within this period after having adjusted for fee schedule increases, there was no significant decrease in gross revenues per physician. Of particular interest is the increase in general practitioners practicing in Winnipeg and the difference in practice patterns between those who were solo practitioners and those who practice within a group setting.

Winnipeg Solo General Practitioners

Table A indicates that in 1971/72 Winnipeg solo general practitioners had an average patient load of 1,626. This compared with the group practice general practitioner counterparts of 2,211. A decade later solo general practitioners had increased their average patient load to 1,732 while group general practitioners had seen a reduction in their average patient load to 2,017. Thus solo general practitioners had increased their average patient load by 6.5% while group practicing general practitioners witnessed a reduction of 8.7%. (The number of contacts per patient decreased by 9.3% for solo practitioners and increased dramatically by 26.5% for the group practice general practitioners). The cost per patient contact was down for both groups, by

Table A

Patterns of Practice of Winnipeg Solo And Group Practice General Practitioners 1971/72 - 1981/82

	Number Apparent Patients 1971/72	Number Apparent Patients 1981/82	Change in Ratio Apparent Pts/MD	Change in Cost per Apparent Patient	Change in Cost per Patient Contact	Change in Gross Revenue
Solo GPs	1626	1732	6.5%	(9.3%)	(6.7%)	(9.9%)
Group Practice GPs	2211	2017	(8.7%)	26.5%	(8.6%)	5.5%

6.7% for solo general practitioners and 8.6% for group practicing general practitioners. Gross revenue after adjusting for constant fee dollars indicated that solo general practitioners witnessed a 9.9% reduction in gross billings while group practicing general practitioners benefitted by a 5.5% increase.

This comparison is of particular interest in that Winnipeg-based solo general practitioners increased in numbers by 100% while at the same time experiencing an average patient load which increased by 6.5%. At face value this would appear to be a contradiction. Within a static population base, the number of solo general practitioners increased by 100% and at the same time the average patient load per solo general practitioner increased. This phenomenon is due to what is known as patient commonality which increased substantially during this time. It is necessary to explain in some detail the concept of patient commonality. In order to do this a definition is provided of the terms "apparent patient count" and "discrete patient count".

The discrete patient count of a population is the number of people who have seen a physician at least once during the year. The apparent patient count is the total patient load of all physicians in the province arrived at by adding the patient loads of all the physicians. Patient commonality refers to physicians who had patients in common or who "shared" patients.

In 1971/72, Winnipeg-based solo practicing general practitioners shared patients with other solo practicing general practitioners by a multiplier of .21. This means that for every 100 apparent patients receiving service from a Winnipeg solo general practitioner, 21 of those patients were also receiving care from another Winnipeg-based solo general practitioner. Within a period of one decade, this multiplier increased to .9. Thus, what would appear to be a contradiction in that the number of general practitioners increased substantially relative to population growth while at the same time the average patient load increased as well, is explained by the fact that solo general practitioners had patients in common with one another at almost four times the level in 1981/82 than occurred in 1971/72. Population remained relatively stable, the apparent patient load per Winnipeg-based solo general practitioner increased, the number of Winnipeg solo general practitioners increased by 100% and the gross revenues per physician expressed in constant fee dollars dropped by 9.9%. It is evident that physicians' "styles" of practice provide sufficient elasticity to buffer most of the marketplace effects which would normally impinge upon the increasing doctor-to-population ratio.

Winnipeg Group General Practitioners

The description of the solo general practitioner practicing in Winnipeg is somewhat different from the experience of the group practicing general practitioner. In 1971/72 group general practitioners experienced an average patient load of 36% greater than solo general practitioners. Over the decade of 1971/72 to 1981/82, group general practitoners lost 8.1% of their average patient load. However, gross revenues of group practicing general practitioners increased by 5.5% which was due to a change in patterns of practice which saw contacts per patient increase by 26%. Thus, group practicing general practitioners in Winnipeg saw a decrease in their average patient load of almost 10% over the decade under consideration but in changing the patterns of practice did not suffer a loss in gross revenue. Unlike solo general practitioners in Winnipeg, group practicing general practitioners did not see an increase in patient commonality (the extent to which two or more physicians' practices have patients in common), amongst other physicians within their group practice but instead reacted by increasing the patient contact rate.

Brandon Physicians

Over the decade under consideration the doctor-to-population ratio in Brandon dropped both for the solo general practitioners and the group practicing general practitioners in Brandon mostly due to an increase in population. With a drop in rates of 14% and 2.6% respectively, gross revenues increased by 49% for solo practitioners and 29% for group practicing general practitioners. A small drop in physicians relative to population was followed by rather large increases in gross revenues.

With regard to solo general practitioners, the dramatic increase in gross revenue was due to an increase in average patient load of 54%. The patient contact rate increased by 17.4% but was countered by a 17.4% decrease in the revenue per contact, leaving revenue per patient almost unchanged. This increase in average patient load is due to what was formerly discussed as patient commonality. Whereas Winnipeg-based solo general practitioners saw an increased patient commonality amongst themselves of 328%, the Brandon group of solo general practitioners witnessed an increased patient commonality amongst themselves of 575%.

With respect to group practicing general practitioners in Brandon, the doctor-to-population ratio dropped 2.6% but gross revenues increased by 29%. This was attributed to an increase in the average contacts per patient of 21% and an increase in the average patient load of 30%. Group practicing general practitioners with already large patient commonalities amongst themselves showed an increase in patient commonalities with other physicians, especially solo practitioners which helped increase their average patient load.

Brandon Specialists

The specialist physician-to-population ratio increased by 115% related to solo specialists practicing in Brandon while the group specialists decreased by 10%. Gross revenue increases were 37% and 48% respectively. Solo specialists practicing in Brandon were able to increase gross revenues by increasing the average patient load by 33%. As well, revenues per contact increased by 21% but were dampened by a drop in the patient contact rate of 14%. Their counterparts practicing specialist medicine within a group setting increased gross revenue by increasing the average patient load by 9% and by increasing both the revenues per contact and the contact rate, 18% and 15% respectively. As is witnessed elsewhere, physician revenues increased by a change in the pattern of medical practice.

Rural Physicians

It is interesting to contrast the behaviour of rural general practitioners with those practicing in Brandon. During the decade the solo practicing general practitioners physician-to-population ratio in rural Manitoba increased 7.6%. Gross revenues increased by 16% which was mainly attributable to an increase in the average patient load of 10%, and an increase in the contact rate per patient of 11% dampened by a drop of 5% in the revenue per contact. When contrasted with their Brandon counterparts, rural practicing solo general practitioners differ mostly due to 17% lower average patient loads, 18% lower contact rates per patient and 7% higher revenues per contact. Brandon solo practitioners increased their average patient loads mainly due to relatively higher patient commonalities. This is also reflected in the average number of physicians seen by residents of Brandon which was 3.13 in 1981/82 in contrast to 2.54 for rural Manitoba residents.

Hospital Utilization Patterns 1971-1981/82

This section indicates the variance in hospital utilization rates experienced throughout the province during this period of time. In 1981/82, excluding newborns, there were 159,345 in-patient cases with a recorded 1,854,492 in-patient days for an average length of stay of 11.6 days per case. Very few cases were treated outside of the province with a recorded 97.7% of cases receiving treatment within Manitoba. In aggregate, there were 1,807 hospitalizations per 1,000 population (Statistics Canada) with a separation rate of 155.3 in-patient cases per 1,000 population. Over 80% of the in-patient cases were discharged from hospital within 10-21 days. Only 5% of all cases remained in hospital for a stay exceeding 30 days and these cases accounted for 50% of the total number of patient days recorded in 1981/82. Acute patients, defined as those who were not newborns, in extended treatment facilities, or who experienced a length of stay less than 60 days, accounted for 59.4% of all patient days or 95.9% of all cases. Of this group of acute patients, those aged 65 or older accounted for 25.6% of the in-patient cases, although in 1981/82, elderly persons accounted for only 11.9% of the population of the province.

Table B

Rate of Acute Patient Days, Hospitalization and Average Length of Stay for Residents of Winnipeg, Brandon and Rural Manitoba, 1981/82

Region	Patient days/1000	Hospital Rates/1000	Average Length of Stay
Winnipeg	930.6	114.4	8.06
Brandon	1340.4	198.9	6.74
Rural	1247.3	190.8	6.54
Manitoba	1074.0	148.8	7.22

It is of particular interest to take these aggregate data and account for them by regions of Winnipeg, Brandon, and rural Manitoba. In order to make a comparison of persons residing in these three regions in the province, data refers only to acute patients described above and is age/sex adjusted. Table B illustrates the remarkable difference by which residents are hospitalized in Winnipeg, Brandon, and in rural Manitoba. When comparing the rates of patient days per thousand population in Winnipeg versus other areas, it is noted that residents of Brandon utilize 44% more patient days per thousand population than do Winnipegers, while rural Manitoba residents use 34% more patient days.

With regard to separation rates from hospital, Brandon residents are separated at a rate of 74% higher than Winnipegers, and rural Manitobans are separated at a rate of 66.8% greater. Average length of stay is highest in Winnipeg at 8.06 days, with Brandon being less at 6.74 days and rural Manitoba, a shorter length of stay at 6.54 days. The reader is reminded that this provides a comparison of similar populations in that it refers only to the those individuals who are acutely ill as defined above and is age/sex adjusted. Winnipeg residents are thus hospitalized significantly less often than residents of Brandon and rural Manitoba but have lengths of stay of 19.6% higher than Brandon residents and 23.4% higher than rural Manitoba residents. Calculated at 75% occupancy, the acute beds used by an age/sex adjusted population of 1000 persons is least for Winnipeg residents with 3.4 beds per 1,000 population, followed by rural Manitoba residents with 4.6 beds and by Brandon residents with 4.9 beds per 1000 population. The Manitoba average acute care beds per 1000 population was 3.9.

An examination of the rates at which individuals are hospitalized in Manitoba supports the view that there is substantial variability and elasticity in the hospital system. A detailed examination of hospitalization rates as applied to diseases upon discharge indicates the same variability of rates. (See Chapter VII).

Manitoba - United States Health Maintenance Organization - A Comparative Analysis

Detail is presented with regard to the United States Health Maintenance Organization prepaid group insurance plans. As a summary it is noted that these health insurance plans are not dissimilar from that which is seen in Manitoba in that a wide variety of insured health benefits are provided for the consumers. The Health Maintenance Organizations' revenue sources resemble closely that which was found in Manitoba prior to the suspension of a premium system which saw Manitobans assessed monthly individual and family premiums. A Health Maintenance Organization is responsible for the health services of enrollees and includes payment for physician fees, charges due to hospitalization, rehabilitation services, not-for-admission or out-patient services attached to a hospital, and home visiting services. Although similar to the services provided in Manitoba, Health Maintenance Organizations differ in two remarkable ways. There is a substantial difference in the number of physicians per enrolled population and there is a significant difference in the rates by which enrolled members are hospitalized.

Health Maintenance Organizations, or the variety of predecessor health plans have been practicing in the United States since the end of the 1930's, and now insure approximately 20 million United States citizens. Health Maintenance Organizations are the fastest growing health insurance plans in America. The ratio of enrolled population-to-physicians is approximately 900 enrollees to one practicing physician. The ratio of practicing physicians includes nurse practitioners, physician assistants, and mid-wives with two health professionals being calculated as the equivalent of one practicing physician. Rates of hospitalization are also most interesting when compared to the Manitoba situation. In Chapters 7 and 8 the hospitalization patterns throughout Manitoba are described in some detail. In 1981/82, after having excluded newborns, those in extended treatment facilities, and those hospitalized for 60 or more days, the Manitoba patient day rate per 1000 residents was 1,074. This compares with the experience in a Health Maintenance Organization of less than 500 hospital days per 1000 enrollees. The reader is reminded that once again there has been an age/sex adjusted comparison between the enrollees of, in this instance the Kaiser-Permanente Health Maintenance Organization which insured in excess of four million Americans, and Manitoba residents. Thus Manitobans are hospitalized at a rate in excess of twice that which would be expected if the Manitoba residents were members of a Health Maintenance Organization such as the Kaiser-Permanente medical plan. This, like the discussion of the varying rates of hospitalization for Winnipeg residents, Brandon residents, and those residing in rural Manitoba, once again indicates the degree of flexibility inherent in the Manitoba hospital system and the considerable room for achievable efficiencies.

Summary

The period from 1971/72 to 1981/82 saw an increase in the number of physicians, primarily those located and practicing in Winnipeg.

Throughout this period the physician-to-population ratio increased and continues to increase. The decade has seen a significant change in the patterns of practice by physicians such that after having added 25% more physicians and adjusting for fee schedule increases, there is no significant difference regarding the gross billings for physicians in 1971/72 as occurred in 1981/82. Physician numbers increased, gross revenues increased, and with the one exception of Winnipeg practicing solo general practitioners, who experienced a drop of gross revenues of 9.9% but doubled in numbers, all other physician groups increased their gross revenues. Had the Winnipeg-based solo general practitioners practiced in a manner similar to their Brandon counterparts, Winnipeg solo general practitioners would have experienced an increase rather than a drop in gross revenues.

This illustrates the flexibility with which the fee-for-service system can accommodate an increase in physicians and an increase in the physician-to-population ratio. There is no indication to suggest the present rate at which physicians are being added to the system will result in sufficient patient competition to bring about a drop in physician gross revenues. If anything, patterns of practice are so flexible that if physicians in Winnipeg were to adopt the practice "styles" of Brandon physicians, medical costs could increase anywhere from 10% to 70%, even if the physician-to-population remained constant.

The situation which is apparent is that the addition of physicians and the increase in the physician-to-population ratio, as was the case between 1971/72-1981/82, shows no indication of any significant drop in gross revenues per physician. The example of the Brandon physicians, exhibits the ability of the fee-for-service system to accommodate widely different patterns of medical practice. The large increase in Winnipeg-based solo general practitioners, as previously indicated at 100% over this decade under consideration, resulted in only a 9.9% reduction in gross revenues. This is the one example of a reduction in gross revenues but indicates the ability of this group to match 1971/72 levels of gross revenues by adopting the patterns of practice of their Brandon counterparts.

The current policy to admit 95 first-year students into the school of medicine and to set the government funded number of intern and resident positions at 338.5, indicates that there will be a continual increase in the number of doctors practicing in Manitoba and, more specifically, within the boundaries of the City of Winnipeg. There is no indication that this will result in anything but an add-on to the medical service program funded by the Manitoba Health Services Commission. Either the present policy of increasing the number of practicing physicians requires interruption and change or the funding agency will face a predictable rate of increase in total and/or individual billings by physicians. The examination of the funding to health care institutions in Manitoba also proved a most illuminating exercise. It will be recalled that, historically, Manitoba has committed a disproportionate amount of health resources to the funding of institutions when contrasted against the Canadian average. This includes the funding that supports teaching hospitals, general hospitals, mental health centres and personal care homes. Although spending an amount equal to the Canadian average on per capita health spending, Manitoba's commitment to an institutional mode of practice is considerably different than its provincial counterparts. During the time under consideration, Manitoba's commitment to general and allied special hospitals rose from 8% below the Canadian average to 16% above the Canadian average. During this time Manitoba's resources committed to the expansion of the personal care home program saw the funding for this form of institutional support rise from 7% below the Canadian average to 35% above it.

This commitment to fund institutional health services shows no parallel resolution in the pressure for increased institutional resources. The system is under criticism by its users that there are insufficient institutional resources to support the population base of one million persons resident in Manitoba.

That such a bed supply "crisis" is perceived to exist by the medical community is not inconsistent with the system's administrators stating that there is no "crisis". Given an increase in the number of physicians in Winnipeg and little or no increase in hospital bed supply, it is not surprising that physicians feel that there is a shortage of hospital beds. In the micro sense, that is from an individual physician's perspective, the perception is entirely correct in that the number of hospital beds available per practicing physician has decreased from the early 70's to the present. However, the relevant question for society, in light of the hospital utilization statistics emanating from the Health Maintenance Organizations in the United States, is whether hospitals should be built for the needs of physicians or for the needs of the population.

The ever present Winnipeg bed "crisis" would simply not be experienced if the average length of stay of Winnipeg residents were similar to those of Brandon residents. Conversely, the high rate of separations of Brandon residents on an age/sex adjusted basis must be correlated with the "style" of practice of Brandon physicians. Since these data are based on the residence of the patient and not on the location of service, this means that the lower average length of stay of Brandon residents may be due to a shorter length of stay for Brandon residents receiving hospital care in Brandon and a longer length of stay for those receiving hospital care in Winnipeg, visa versa, or their average lengths of stay in both locations may be the same. The point is, that residents of Brandon on average have a lower length of stay than Winnipeg residents irrespective of where their hospitalization occurs. The rates of admission and average length of stay as exhibited in the Winnipeg and Brandon system demonstrates the elasticity of the hospital system, much like the experiences highlighted in the medical system. A more thought-provoking comparison occurs when the rates of hospitalization across Manitoba are compared with the Kaiser-Permanente Health Maintenance Organization. As previously cited, a Health Maintenance Organization delivers health services to an enrolled population base with no fee-for-service payments. There is no incentive to use the hospital as the focal point of care. A comparison of the age/sex adjusted population of Manitoba versus the Kaiser-Permanente Health Maintenance Organization illustrates that Manitoba residents, excluding newborns, those with lengths of stay in excess of 59 days, and those in extended treatment facilities, are hospitalized at a rate greater than two times their Health Maintenance Organization counterparts. This suggests that hospital utilization is extremely variable with a strong possibility to increase efficiencies if alternatives to hospitalization are made available. In order to see this change in delivery patterns, it is necessary to consider the role of the funding agency, the Manitoba Health Services Commission.

Traditionally, the Manitoba Health Services Commission has assumed the role of a funding agency. After having established operational standards, the system was based on a bed guideline per 1000 population established in the early 1970's.

In keeping with these bed number guidelines, the institutional sector of health service provision in Manitoba has not been flexible in encouraging or facilitating change. The discussion of the Health Maintenance Organization system in Chapter IX indicates the relative efficiency in the use of real resources of a system that is not as dominated by institutional health services. The commitment to provide a maximum amount of care on an outpatient medical and a not-for-admission surgical basis is one of the reasons for the success of the Health Maintenance Organization concept. There is no evidence to suggest that the fee-for-service system in Manitoba is any different from the American system (non-Health Maintenance Organization) which has been reported in numerous publications as using considerably more hospital bed days than a non-fee-for-service system. If the efficiencies of this model are to be considered in Manitoba, and if health care costs are going to rise less slowly than in the previous decade, which saw an average annual increase in the budget of M.H.S.C. of 12.98%, then such a move must be forthcoming. The present Manitoba health service system must be questioned regarding such interesting points as why the rates of hospitalization in Manitoba are so dramatically different not only in Manitoba but compared to a system that has fewer incentives for the hospitalization of patients. The agency must ask why the average length of stay is so variable throughout this province and is remarkably high when compared to a Health Maintenance Organization. Such programs as early discharge for obstetrical patients, which is something that has been reported in the literature since the Second World War, is just now a new program in only one hospital in Manitoba. There are countless examples of the way in which the average length of stay can be reduced and such examples must be perused with rigor. However, one must be careful in driving down average length of stay because doing so without reducing the resultant excess capacity will only serve to increase patient throughput and as such, increase total expenditures on hospital services rather than reduce them.

In summary, both the medical and hospital systems appear to have a high degree of flexibility in terms of the patterns of practice that are followed. There is no evidence to suggest that the Manitoba system cannot be made more efficient by accepting a target of hospitalization rates per thousand population in keeping with what is known to be efficacious elsewhere. With regard to the medical services system with administratively fixed prices there is no evidence to suggest that inherent in it are checks and balances which will drive down or maintain real total medical services expenditures in light of an increasing number of physicians relative to population. Manitoba faces increased health costs at predictable rates, assuming the hospital and medical system do not change their present patterns of delivery, unless there is a drop in the number of physicians entering practice in Manitoba and in the commitment to provide the most efficacious care possible to those individuals who can be treated outside of an institutional bed.

CHAPTER I

MANITOBA AND MEDICARE: THE CANADIAN CONCEPT

The evolution and development of Manitoba's health care system is a collective achievement of which the province's citizens are quite rightly proud. Manitobans enjoy universal access to high quality hospital and medical care, whose benefits are available to those in need regardless of their economic position. To the extent that the inevitable burdens of illness and injury can be relieved by health services, those services are available as a matter of right.

And the costs of these services are spread across the whole population more or less in proportion to their ability to pay (at least as reflected in the general tax system). The physical and emotional burdens of morbidity and mortality are not made heavier by the risk, or the reality, of heavy or ruinous personal expenditures for health care. The public insurance system cannot relieve sufferers of all the financial consequences of illness, any more than the providers of care can relieve all the physical or emotional consequences. There remain many costs of illness over and above payments for specific health care services. But within its sphere, universal public insurance has redistributed a significant share of the economic burden of illness from citizens-as-patients to citizens-as-taxpayers, and thus to shoulders better able to bear that burden.

In this respect, as in many others, Manitoba is representative of the more general Canadian pattern. Geographically the heart of the continent, the province is also near the Canadian mean in per capita income and forms of economic activity. Its citizens earn their livings in a mixture of manufacturing, farming, and resource-based activities which is more balanced than many of the other provinces. They receive their health care from a funding and delivery system which shares the common Canadian pattern of provincial administration, with federal contributions, for the services of private fee-for-service physicians and voluntary hospitals. And the Manitoba health care system has tended to steer a middle course between the social experimentation of Quebec and the entrepreneurialism of Alberta.

Indeed, on several key indicators of health care activity, Manitoba is and has historically been on or very close to the Canadian average. The average Manitoban spent (or had spent on their behalf) $1243.10 for health care in 1982, within 2% of the national average of $1220.18, and Manitoba spending has stayed very close to the national average for the last twenty years. The supply of physicians per capita has been within 3% of the national average throughout the same period. In 1983 there were 500 people per Manitoba physician, compared with 512 for Canada as a whole, but for most of the previous decade the discrepancy was less than 1%. Per capita spending on hospital and medical services, the major categories covered by the public insurance plans, was $670.13 in Manitoba in 1982, only 2.1% below the national average of $684.73. In broad outline, then, the Manitoba health care system is perhaps the best representative of the wider Canadian system, which is itself the average or aggregate of the ten provincial systems. The study of the Manitoba experience thus has particular relevance for the country as a whole. When one focuses on more detailed measures of system performance, however, some very significant discrepancies are found between patterns of care and of costs in Manitoba and in the rest of the country.

Manitoba and Canada are not, of course, unique in having developed an extensive and high quality system of hospital and medical care services; in this they are participants in a technical and organizational process which is common to most if not all of the developed world. All advanced industrialized countries now have an extensive array of health care services. There is rather more variety in the degree of access to such services, and in particular, in the importance of personal financial resources as a determinant of an individual patient's ability to benefit from this system, but again Canada is not unique in this dimension.

In the United States, of course, where the health care delivery system is perhaps more similar to Canada's than is that of any other country, a significant proportion of the population is denied access to care, or required to make do with care of significantly inferior quality, because of the lack of personal resources or the private insurance coverage, to gain access to the mainstream delivery system. Many others are exposed to the risk of substantial economic burden, up to and including personal bankruptcy. But other countries, Sweden for example, have, like Canada, been able both to ensure their citizens access to high quality care, and to relieve them (as patients, not as taxpayers) of the economic burdens of illness. While few other nations have gone as far as Canada in attempting to eliminate the personal economic burdens, many European countries retain a small residual private sector and/or some form of user charges; the United States represents an extreme, if not a polar case, in terms of the extent to which its financing system associates economic and illness burdens.

Moreover, while Canadians, and Manitobans in particular, may enjoy access to hospitalized medical care largely unimpeded by specific user charges (unlike, say, Albertans or to a much lesser extent Ontarians or British Columbians) still, access is a complex and multi-dimensional concept. There may be many barriers to access other than financial, which show up for example in British studies showing significant class differences in use of "free" care. There is some reason to believe that social characteristics are less of a barrier to access in Canada, but geographic constraints may well be more severe than in most other developed countries.

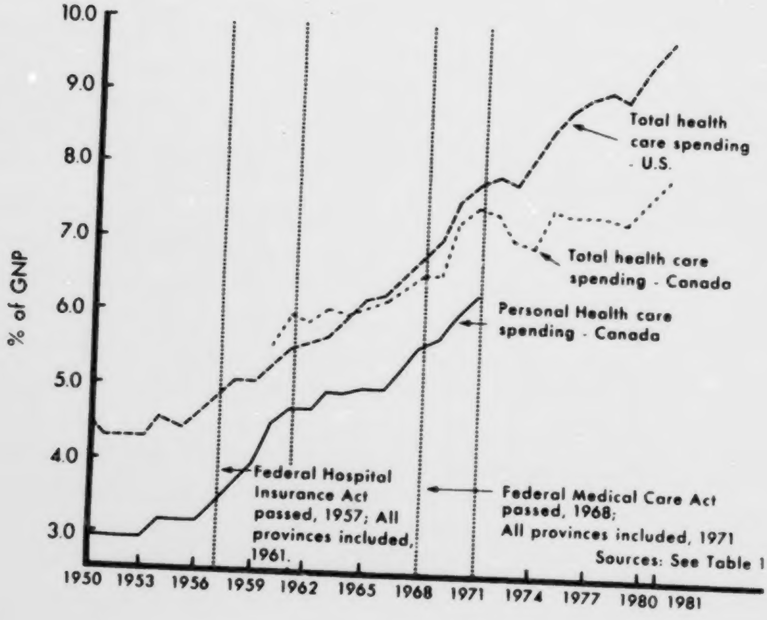
Where Canada is unique is in the extent to which it has been able to provide access to high quality care at a relatively stable cost to society as a whole. Most other developed countries are struggling with a problem of hospital and medical costs "exploding" or at least rising steadily as a share of national income and resources. This is as true of socialized Sweden as it is of the entrepreneurial United States, or the intermediate German system. Indeed, it is argued in some quarters that such cost increases in health care are an inevitable consequence of rising levels of affluence, and that they neither can nor should be controlled. Those responsible for paying the bills, however, have not found that argument convincing.

The remarkable feature of the Canadian system, as shown in Figure I-1 and Table I-1, is that its costs have represented a relatively stable share of national income since the completion of adoption of the provincial plans in 1971. As shown in Figure I-1, this stability is in marked contrast both to United States experience over the same period, and to Canadian experience prior to 1971. Closer inspection of these data shows that the Canada/United States difference is entirely due to differences in the costs of hospital and medical services; the behaviour of costs in the remaining categories of expenditures such as drugs, dentistry, and other items does not show significant cross-border differences. The conclusion is inescapable that universal public hospital and medical insurance in Canada, superimposed upon a system of delivery which was at that time quite similar to that of the United States, was the determining factor in the achievement of relative cost stability. And the contrast with Sweden or Germany suggests that it is not universality or public payment alone which leads to cost control, but the location of that form of payment in a single agency (sole source funding) at a level of government senior enough to muster the resources necessary for system oversight, negotiation, and control. The Swedish system of universal public finance and delivery of health care at the county government level has turned out to be almost as expensive (relative to national income) as the incomplete, fragmented and entrepreneurial United States system.

As Table I-1 shows, Manitoba spends a somewhat higher proportion of its provincial output and resources on health care than does Canada generally. This results from levels of per capita income and output which are somewhat below the national average, interacting with health expenditures almost exactly on the average. The discrepancies are not very large, but in general it appears that in maintaining a health care system which (in per capita costs) matches the Canadian standard, Manitobans must make a somewhat greater effort than Canadians generally in terms of the share of their incomes given up for other purposes.

International comparisons thus strongly support domestic impressions, that in world terms the Canadian health care system has on

FIGURE I - 1



Federal Hospital Insurance Act passed, 1957; All provinces included, 1961.

Federal Medical Care Act passed, 1968; All provinces included, 1971

Sources: See Table 1

TABLE I - 1

HEALTH EXPENDITURES AS A SHARE OF TOTAL INCOME

	Health Expenditures ($mn.)	Manitoba Provincial Income ($mn.)	Health Share (%)	Health Expenditures ($mn.)	Canada National Income ($mn.)	Health Share (%)	Health Expenditures ($bn.)	Unites States National Income ($bn.)	Health Share (%)	Manitoba Canada Health Share	Canada/U.S. Health Share	
1982	1288.0			30087.7	356489.3	8.44%	322.4	3059.3	10.54%	1.16	1.25	1982
1981	1125.6	12790.9	8.80%	25769.3	339069.7	7.60%	286.6	2937.7	9.76%	1.12	1.28	1981
1980	944.3	11228.3	8.41%	22178.6	296505.3	7.48%	249.0	2633.1	9.46%	1.11	1.26	1980
1979	822.9	10325.0	7.97%	19067.2	264454.9	7.21%	215.0	2417.8	8.89%	1.10	1.23	1979
1978	746.9	9255.3	8.07%	17094.1	232256.8	7.36%	189.3	2163.9	8.75%	1.13	1.19	1978
1977	698.0	8379.4	8.33%	15532.6	210184.0	7.39%	169.2	1918.3	8.82%	1.07	1.19	1977
1976	629.2	7934.4	7.93%	14158.7	191852.3	7.38%	149.7	1718.0	8.71%	1.03	1.18	1976
1975	539.3	6967.7	7.74%	12381.4	165305.7	7.49%	132.7	1549.2	8.57%	1.04	1.14	1975
1974	446.7	6169.9	7.24%	10247.5	147446.0	6.95%	116.4	1434.2	8.12%	1.09	1.17	1974
1973	399.9	5207.0	7.68%	8720.3	123517.0	7.06%	103.2	1326.4	7.78%	1.09	1.10	1973
1972	353.8	4367.9	8.10%	7790.2	105273.0	7.40%	93.5	1185.9	7.88%	1.10	1.07	1972
1971	326.4	3946.8	8.27%	7122.3	94460.2	7.54%	83.3	1077.6	7.73%	1.11	1.03	1971
1970	295.1	3647.7	8.09%	6255.9	85697.3	7.30%	74.7	992.7	7.52%		1.03	1970

average achieved a remarkably good balance among quality, access, and costs. The overwhelming support that the system receives from individual Canadians, expressed in polls taken at the time of the debates over The 1984 Canada Health Act, and reflected in the unanimous all-party support for that Act in the Federal House of Commons, seems eminently justified.

Why then is the system so widely perceived to be in crisis, and in particular to be a continuing source of policy problems for provincial governments? Why do provincial governments perceive themselves as wrestling with cost explosions, and specifically, why these studies and this report? There appear to be several related sources of concern, or grounds for, at the very least, preventive worry. There may also be grounds for preventive intervention.

First, it is by no means clear that the favourable balance, system-wide, between access, quality, and cost, can be maintained in the future as it has been in the past. At the very simple level of trend observation and projection, Table I-1 illustrates that in 1982 health care costs increased very sharply relative to national income, in both Canada and the United States. Does this indicate the end of cost control on the Canadian system? And if so, what will follow?

The easy answer is no, the sharp jump in cost over Gross National Product (GNP) in 1982 is the result, not of a spurt in health care costs, but of a sharp drop in GNP. General and severe economic recession pushed down national income in both Canada and the United States, while the health care system was largely immune from the downturn. The jump in the cost/GNP ratio in both countries shows that what is witnessed is not a specifically Canadian breakdown in the process of cost control, and it may reasonably be expected that, at least in Canada, a return to higher levels of overall economic activity will cause that ratio to stabilize or even to fall back toward previous levels.

But this story, while true, is incomplete. If one adjusts 1982 GNP levels to remove the effects of recession (by assuming, for example, that real growth in output had proceeded from 1981 to 1982 at its average rate over the 1976-1981 period), the ratio of Canadian health costs to GNP in 1982 is reduced to 7.8-7.9%. While well below the actual ratio of 8.44%, this is still above the 1981 ratio of 7.60%. Even on this adjusted basis, the ratio has risen from 7.21% in 1979 to 7.8-7.9% in 1982. The 1981 and 1982 figures are the highest on record, suggesting the resumption of a relatively rapid upward trend in costs after a hiatus of about ten years.

Now, of course, it is a primary characteristic of trends that they tend to persist until they stop, after which they either flatten out, or reverse themselves. And predictions of when this will occur are notoriously unreliable. By itself, the observation of a 1979-1982 rise tells nothing about the future. There are, however, several identifiable processes now underway, and expected to continue in the future, which would suggest that costs may be on their way up again.

First, the steady growth in physician supply is relative to the population, which is a Canada-wide phenomenon. At present rates of medical school output and population projections, the supply of physicians per capita will continue to rise at about 1.5% per year, on average, for the indefinite future. This means, as a mathematical necessity, either the cost of physicians' services per capita must rise by (at least) about 1.5% per year, in real terms, regardless of who pays it, or for what, or the average gross incomes of physicians must fall. This piece of simple arithmetic is quite independent of involved discussions about how many physicians is enough, or where they should be, or what they should do; it is an "iron law" or global constraint on the system.

The relevance of this global constraint is shown by the experience of the 1970's. In the early 1970's, one source of restraint on health costs was severe downward pressure on physician fees and incomes. These rose less rapidly than the general price level, so that in terms of real purchasing power Canadian physicians' incomes actually fell. In the late 1970's, increasing physician militancy halted this process (except in Quebec) and the resurgence of costs in the early 1980's is partly a result of their fees and incomes outpacing the general economy. While these relative gains will probably not continue, it is likely to be very difficult politically to push physician incomes back onto a downward path in the present climate. Yet if their incomes simply grow in line with the general economy, the increase in their supply will automatically drive up overall system costs.

Secondly, the often-noted aging of the population will inevitably place upward pressures on per capita health costs. The effects of changing age structure will obviously be very different across categories of services, being massive in long-term care and very small in physicians' services. Moreover, it is becoming increasingly well documented that much of the present concern over the health costs of the aged arises because the care system itself is steadily increasing the intensity and sophistication of the care received by the elderly in particular. The quantity and cost of servicing received per capita, adjusted for age of recipient, is rising much faster among the over 65 population than among the rest. But after due account is taken of the various ways in which demographic shifts have been misinterpreted and pressed into the service of other objectives, it remains true that the combination of lowered birth rates (since 1965) and increased longevity must steadily add to per capita costs if the health care system continues to confront them in its traditional, and present, fashion.

Thirdly, the rapid acceleration of the process of technological change in health care, driven particularly by economic forces in the United States, has over the last decade placed increasing pressure on the funding of hospitals in Canada. So far, that pressure has been resisted with reasonable success. But it is forecast to intensify in the future.

This pressure is rooted in the peculiar feature of health care delivery, unique, or perhaps shared only with the defense industries. Everywhere else in the economy, technical progress and the advance of knowledge tend to lower costs of production. In health care, it usually adds to costs. The reasons for this are now quite well understood, and relate to the tendency of new forms of intervention to spread rapidly in advance of (or in the absence of) sound evidence of their effectiveness. But the expansion in costs is not only profitable for the technology industries themselves, but professionally satisfying, and often also profitable, for the providers of care.

As noted, the Canadian health care system has been much more successful than the American system in restraining the application of questionable technology, or more important (and not the same thing), the questionable application of technology. But as the discrepancy between Canadian and United States patterns of medical practice grows, this success is increasingly being seen by physicians, rightly or wrongly, as denial of access to "high quality" care. If patients and citizens come to see it this way as well, the presures for cost-expansion will become increasingly severe.

There are thus several good reasons for concern that the resumption in the early 1980's of growth in the share of resources going to health care may be the beginning of a long-run trend. Of course, one must be clear why this resumption, if it is occurring, is a problem. There is nothing inherently "right" or magical about any particular share of national income--7%, 7 1/2%, 8%, or even 6% or 10%--spent on health care. The important underlying question is whether we as patients or taxpayers, get value for the money spent, or more accurately for the real resources given up.

This said, however, it must also be kept in mind that continuing increases in share are not sustainable. The United States experience strongly suggests that there are no forces internal to the health care system which tend to limit its growth at any level or share of GNP, it simply grows until some effective external constraint is reached. As Americans have failed to develop such constraints, their system has continued to expand, and the policy proposals for limitation have become increasingly radical. The question is not, will the United States share stop growing--it will, eventually--but how revolutionary (for good or ill) will the changes in the United States health care delivery system be before that is achieved. At present, radical changes in the United States are underway whose consequences are very difficult to predict. The point for Canadians is that these are the eventual inevitable consequences of steady growth in the health care share of GNP. If the Canadian health care system is back on that track, there are grounds for concern.

This discussion of cost trends has all been at the system-wide level, and over a rather long time-horizon. The problems of provincial governments, while they obviously arise and evolve within that broader context (today's problems are to a large extent the outcome of manpower planning mistakes of the late 1960's), nevertheless are much more specific in nature and unfold on a much more rapid time scale. And a system of health care finance and delivery which appears very successful on a world scale and over a time-span of decades may nevertheless be a source of continuing and possibly accumulating administrative headaches for those with the responsibility for financing and/or running it.

In particular, from the perspective of provincial governments, financing health care has been absorbing a larger and larger share of public budgets. Much of this has been a transfer from private to public budgets, as public programs have been initiated and expanded. The overall cost data do not support the casual rhetoric that a transfer of functions from the private to the public sector necessarily increases overall costs. Indeed the Canada/United States comparison strongly indicates the converse, at least in health care. The confusion between expanding public sector costs and expanding total social costs is simply incompetent accounting.

Nevertheless the transfer of functions has clearly increased the administrative and political problems in the public sector, as the share of health resources which is directly or indirectly under public management has grown. Yet there does not appear to have been a corresponding growth in resources or change in the style of public administration of those resources.

From the inception of the public hospital and medical insurance programs in each of the provinces of Canada, public influence over costs and forms of delivery has been exercised by the so-called "blunt instrument" approach. In the case of physicians' services, this has implied a concentration on holding down the escalation of physicians' fees, with important secondary attention to those features of fee schedule structure which might provide loopholes for expanded billings at constant fees. More recently belated attention has been given to manpower levels, though little has yet been done. But in no province have there been serious discussions, or even much examination, of the servicing patterns of patients being generated by the medical care system. Who does what, and with which, and to whom, has been treated by provincial governments and physicians alike as "the practice of medicine" and none of government's business (except for the very few egregious outliers from standard patterns of professional behaviour which are identified by profile monitoring for subsequent investigation). But this approach, of government trying to control overall costs while individual professionals determine what gets done within those global constraints, leaves no ground for joint discussion and analysis of the effectiveness of what is being done, or of what might be done. It leads into the sterility of recent debates over "underfunding" in which professionals have claimed with increasing stridency that present funding levels are insufficient to support the provision of adequate or appropriate care to the population, and governments have been equally adamant in refusing to expand funding. But neither side offers any way of resolving such disputes, other than capitulation by the other side, or an arbitrary sawing-off in the middle.

Hospital funding is in a similar case. Global budgeting enables governments to constrain the overall size of the hospital sector, but (except through specific decisions on new capital funding) to exercise very little direct influence over what is done in hospitals or how. Professionals and administrators, who do control the internal operations, have no economic or organizational incentives to examine the effectiveness of what they do. Indeed current incentives discourage this. Accordingly the struggle over budget levels, between reimburser and provider, is not focused on the value for money issues of what more (less) money would buy (give up) in terms of the outcomes experienced by patients. The blunt instrument of global prospective budgeting permits both sides in negotiations to avoid these critical underlying questions and to negotiate over a quantity which, in the absence of considerable supporting information, simply cannot be defined as "too high" or "too low".

Such "blunt instrument" approaches to public funding and management are not necessarily inadequate. For most of the history of the public insurance plans in Canada, they appear to have yielded a surprisingly good compromise between professional expertise and public fiscal accountability. The concern at present, however, is that the costs of this approach are escalating. The pressures by physicians in several provinces to introduce or maintain extra-billing of patients suggest increasing dissatisfaction with fee schedule controls. Whether the new Canada Health Act will successfully close off this form of erosion remains to be seen, but in any case the dissatisfaction will remain. Hospital administrators express increasing frustration over growing discrepancies between what is technically and clinically feasible (and demanded by ever increasing numbers of physicians) and what is financially possible.

It is difficult for one not a participant in the negotiating process to assess the extent to which these expressed frustrations are real, as opposed to merely the current mode of expression of ongoing adversary relationships in a continuing bargaining game. But if it is true that the level of acrimony and frustration is increasing, then "business as usual", however successful its outcomes, may be becoming more and more difficult to maintain. The political (and personal) costs for the participants may be becoming high enough that new forms of interaction and a broader agenda for negotiation begin to look more attractive.

Finally, even if one believes that the existing Canadian health care system is in fact relatively stable, not experiencing the beginning of a new cost explosion, and that despite all the rhetoric, the present forms of negotiation and control are still working adequately at an acceptable cost, more detailed examination of system management and performance would still be justified. Health care is still a large scale economic activity. As noted above, hospital and medical care in 1982 cost (on average) $670 for every man, woman, and child in Manitoba, and all forms of health care (of which more than three-quarters flowed through the public sector), cost $1243.10. By 1984, this figure will almost surely be over $1500. Even if the Manitoba health care system is functioning relatively or even very well in world terms, and even if perceived threats to its maintenance of that performance do not materialize or can be successfully turned back, it is still of fundamental importance that an enterprise of this magnitude, of such central importance in both human and social, as well as economic, terms, be managed as effectively as possible.

Yet there exists a considerable amount of evidence, rather diverse but impressive in totality, suggesting that present patterns of care are far from as efficient or as effective as they might be. Such evidence includes cross-country or cross-regional studies of patterns of surgical utilization which indicate wide divergences without corresponding differences in patient outcome or benefit (some of the best of which have in fact been done in Manitoba), or cross-system studies such as the data from United States Health Maintenance Organizations (HMO's) which show consistent differences in hospital use of 20% to 40% between similar populations cared for by fee-for-service and by pre-paid group practice physicians. But it also includes studies of particular diagnostic and therapeutic procedures, indicating both highly questionable frequencies of use and/or costs of provision, and it shades into expert opinion and judgement by clinicians and others that, in numerous specific instances, substantially more efficient and effective performance is possible without harm, and indeed with quite possible benefit, to patients.

On the other side of the ledger, effective "blunt instrument" controls leave open the possibility that some forms of services and interventions are not being provided which would, or at least in appropriate circumstances could, represent value for money. Effective management, despite frequent suggestions to the contrary, is not synonymous with cost control - if it were the proper policy would be to shut down the health care system entirely. In confronting the seemingly endless cries for "more" from providers it is too easy to forget that some of the claims might be justified.

In summary, then, any exploration of the Manitoba health care system should start from the realization that it is, and has been, a remarkably successful social achievement. The problems besetting other societies as they struggle with health care funding and delivery underline this relative success. Yet complacency is not justified--resting on laurels can be quite painful--for at least three reasons.

First, there are a number of trends and indications suggesting that policies which were successful in the past will not be so in the future, particularly in the cost domain. And if "cost control" collapses, the American experience suggests that eventually (though perhaps not for a decade) so does everything else. Secondly, even if the policies of the past can continue to yield the same performance, the cost of their application appears to be rising such that they may eventually become politically and/or administratively infeasible. And finally, even if "business as usual" turns out despite the Cassandras to be both possible and no less successful than in the past, there is extensive and accumulating evidence that the Canadian provincial health care system could be managed a good deal more efficiently and effectively than it is at present. Relative success is not absolute; there is a good deal of scope for doing better. And given the huge scale and importance of the health care enterprise, gains in efficiency are likely to be well worth the effort which they will undoubtedly cost.

CHAPTER II

EXPENDITURES PER CAPITA ON INSTITUITIONAL CARE AND PROFESSIONAL SERVICES

It is quite possible to make, or recommend, future health policy in ignorance or defiance of past history. But such policy is unlikely to be successful. Those who are unable to learn from history are condemned to repeat it. Accordingly, this report begins with a summary description of the current Manitoba situation, and of trends over the past two decades. On this basis it will draw certain conclusions about the effects of past policies, and will describe the present situation both absolutely and relative to the broader Canadian context.

Table II-1 presents selected data on Manitoba population, and health expenditures, and corresponding Canadian data, for selected years from 1960 to 1982. At this highly aggregated level, several points emerge.

First, population counts differ significantly according to who is counting, when, how, and for what purpose. The data in this chapter, derived from federal sources and comparing Manitoba patterns with all of Canada, will use Statistics Canada population data, estimated as of July 1 of the relevant year, and reported by Health and Welfare Canada in the Table sources. But as Table II-1 makes clear, this differs from the Manitoba Health Services Commission estimates of registered population (June 1 in 1971, December 1 in 1976 and 1982) on which are based detailed utilization and cost data for Manitoba alone. (Such discrepancies are sufficient to ensure that all estimates of nominally similar magnitudes taken from different data sources will be very slightly different). Table II-1 also shows the remarkably close agreement between per capita health spending (total, all types and all sources) in Manitoba and in Canada. Since 1976, Manitoba spending has increased slightly faster than the Canadian average. But to all intents and purposes, Manitoba spending for health care is right at the national average and has followed that average closely since 1971. The 1960 data show Manitoba health spending nearly 5% above the national average, but by 1962 this difference had shrunk to 1.5%. Thus, Manitoba was close to the national average during the 1960's as well.

TABLE II-1

MANITOBA AND CANADA POPULATION AND HEALTH EXPENDITURES, Selected Years, 1960 - 1982

	1960	1971	1976	1982
Population (000):				
Health and Welfare	908.0	989.1	1021.6	1036.1
M.H.S.C.	n.a.	1013.5	1078.7	1078.5
Health Expenditures per capita ($):				
Manitoba	$126.14	$330.01	$615.88	$1243.10
Canada	$120.34	$329.86	$615.12	$1220.18
M/C	104.82	100.05	100.12	101.88
Health Expenditures as % of GNP ($):				
Manitoba	n.a.*	8.27	7.93	8.80**
Canada	5.57*	7.54	7.38	7.60**
M/C	n.a.*	109.68	107.45	115.79**
Health Expenditures per capita ($1971):				
Manitoba	$174.95	$330.01	$383.97	$453.36
Canada	$166.91	$329.86	$383.49	$445.00

Average Annual Rate of Increase of per capita Health Expenditures ($1971):

	1960-71	1971-76	1976-82
Manitoba	5.94%	3.08%	2.81%
Canada	6.39%	3.06%	2.51%
M/C	92.96	100.65	111.95

*In 1960, Manitoba health spending was 7.68% of personal income, a less inclusive measure than Gross National Product. This was above the corresponding Canadian value of 7.30%.

**Data for 1981, not 1982.

The burden of this spending, however, has increased more rapidly in Manitoba as total provincial income and output have grown less rapidly than the national average. By 1981, the share of Manitoba's income going to health services was nearly 16% above the national share, and this gap had grown sharply since 1976. Thus the relative provincial effort to support health care services has always been above average, in order to keep per capita spending at national average levels, and in recent years it has increased still more.

Of course a large part of the apparent increase in health spending, particularly during the last decade, has been a result of general inflation rates. Thus Table II-1 also displays per capita spending adjusted to constant (1971) dollars by division by the Gross National Expenditure (GNE) deflator. Changes in this constant dollar figure can result from either changes in service utilization per capita, or changes in the relative prices of health services--sector-specific inflation. The GNE deflator adjusts for economy-wide price changes, but not for changes specific to health care. This adjustment shows that per capita health care expenditures in Manitoba outpaced general inflation by about 3% per year throughout the 1970's. The slowdown in the late 1970's was less marked than in the rest of Canada, but was not dramatic in either case. In Manitoba, as in the rest of Canada, it appears that health care spending in total has been well insulated against the effects of general inflation and of fluctuations in real income. In the early 1970's its share of national income dropped because real income growth (net of inflation) was quite rapid; in the late 1970's stagnant real growth overall was associated with a rising health share. But despite the rhetoric of "underfunding" and of "cost explosions" a steady trend of 2 1/2-3% annual growth in health expenditures, net of inflation, persisted at least to 1982.

But steady growth in aggregate health spending can, and does, mask substantial variations in the growth rates of its components. The way health care spending is distributed in Manitoba, and the patterns of change in different shares, are different from the overall Canadian patterns in several significant respects which are detailed in Tables II-2 and II-3.

Table II-2 shows that within an overall total of health spending, which is rising in line with national averages, Manitoba has in the last decade been significantly increasing its relative emphasis on institutional care. From 1971 to 1982, Manitoba's spending outpaced the Canadian average by approximately 16%, to move from 5% below to 10% above. All institutional sectors increased their relative standing, but the really significant growth was in spending on homes for special care, or in Manitoba, personal care homes. This sector grew explosively all across Canada, 19.33% per year compounded from 1971 to 1982, but Manitoba's spending grew at an even more spectacular 23.46% per year for eleven years, to finish over one-third higher than national average per capita spending (on, it will be recalled, significantly smaller provincial per capita income).

Yet this expansion in non-hospital institutional care appears to have been a pure add-on to, not a substitute for, hospital care, at least in terms of expenditures. (Later it will be shown that there is some substitution in terms of utilization patterns, which does not, however, translate into expenditure changes). Manitoba expenditures on general and allied special hospitals grew at almost exactly the same rate as the Canada average from 1971 to 1976, while personal care home expenses per capita were rising 30% per year, a rate of increase 40% above the very fast all-Canada increases. In the six years after 1976, Manitoba continued to increase its spending on homes for special care faster than the national average, though less dramatically so. But Manitoba spending on general and allied special hospitals over this period also outpaced the national averages.

These aggregate data appear to be quite conclusive in rejecting the view that an expansion in alternative forms of institutional care will necessarily reduce expenditures on in-patient care. At least as applied in Manitoba, even a policy of rapid expansion in spending on personal care homes has not led to any detectable reduction in hospital spending. Rather it has been a primary factor pushing institutional spending in Manitoba up to 10% above the national average in 1982. Of a total difference of $65.95, homes for special care account for $58.85 while

TABLE II-2

Manitoba and Canada per Capita Expenditures, on Institutional Care
Selected Years, 1960-1982

	1960	1971	1976	1982
Institutions, Total:				
Manitoba	$57.13	$160.88	$364.25	$738.65
Canada	52.84	169.92	347.93	672.70
M/C	108.12	94.68	104.69	109.80
General and Allied Special Hospitals:				
Manitoba	$35.54	$111.50	$234.23	$473.71
Canada	$35.27	119.75	251.04	488.49
M/C	100.77	93.11	93.30	96.97
Homes for Special Care:				
Manitoba	$9.10	$22.24	$80.88	$225.84
Canada	$6.22	$23.90	$62.44	$166.99
M/C	146.30	93.05	129.53	135.24
Other Hospitals:				
Manitoba	$12.49	$27.14	$49.13	$39.11
Canada	$11.35	$26.27	$34.45	$17.22
M/C	110.04	103.31	142.21	227.12
Expenditures Per Capita ($1971)				
General and Allied Special Hospitals:				
Manitoba	$49.29	$111.50	$146.03	$172.76
Canada	$48.92	$119.75	$156.51	$178.15
Homes for Special Care:				
Manitoba	$12.62	$22.24	$50.42	$83.26
Canada	$8.63	$23.90	$38.93	$60.90

general and allied special hospitals narrow the gap by $14.78 and "other hospitals" add to it by $21.89. (This last category, mental, federal and TB hospitals, appears to be being phased out, and the Manitoba/Canada differentials reflect primarily different rates of adjustment).

Overall, the institutional sector has been a principal source of growth in health spending during the post-1971 decade, despite the pressures for restraint. Table II-2 shows the growth of expenditures in hospitals and homes for special care, adjusted for general inflation (devided by the GNE deflator). In Canada as a whole, inflation-adjusted hospital spending per capita rose an average of 5.50% per year from 1971 to 1976, slowing sharply to 2.18% per year after 1976; while homes for special care grew much faster--8.88% per year over the whole 1971-82 period. In Manitoba, hospital spending grew at almost exactly the same rate, 5.54%, from 1971 to 1976, but fell somewhat less sharply after 1976 to 2.84% per year. Homes for special care outran inflation by 12.64% per year over the whole eleven year period.

Table II-3 disaggregates per capita spending on professional services, principally physicians and dentists. Here a quite significant divergence is found between the Manitoba experience from 1971 to 1982, and that of the rest of Canada. Manitoba's per capita outlays on physicians' services have barely kept pace with inflation over the decade, dropping back sharply in the early 1970's and catching up in the latter half. From 1976 to 1982, Manitoba's expenditures move in line with the national averages, both rise about 15% faster than the inflation rate over this five year period. But in 1976 Manitoba expenditures were 12% below their level of 1971 (inflation-adjusted); the Canada average was unchanged from 1971.

Of course the early 1970's reduction came on the heels of a decade of exceptionally rapid growth; from 1960 to 1971 per capita expenditure (in constant dollars, adjusted for inflation) on physicians' services rose at an average rate of just under 6% per year. But even this was outpaced by the rest of Canada at 7% per year. Manitoba's relative expenditure position thus dropped by 20% from 1960 to 1976.

Dentistry and other professional services do not show the same pattern. Canadian expenditures per capita, inflation-adjusted, for

TABLE II-3

Manitoba and Canada per Capita Expenditures on Professional Services
Selected Years, 1960 - 1982

	1960	1971	1976	1982
Professional Services, Total:				
Manitoba	$30.58	$76.17	$119.83	$241.89
Canada	$28.65	$77.59	$130.61	$266.20
M/C	106.74	98.17	91.75	90.87
Physicians' Services:				
Manitoba	$21.86	$57.11	$80.65	$157.32
Canada	$19.82	$57.91	$91.37	$179.02
M/C	110.29	98.62	88.27	87.88
Dentists' Services:				
Manitoba	$6.18	$13.76	$31.49	$66.50
Canada	$6.12	$14.43	$30.40	$68.24
M/C	100.98	95.36	103.59	97.45
Other Professional Services:				
Manitoba	$2.55	$5.30	$7.69	$18.07
Canada	$2.70	$5.25	$8.84	$18.94
M/C	94.44	100.95	86.99	95.41
Expenditures per capita ($1971) Physicians:				
Manitoba	$30.32	$57.11	$50.28	$57.37
Canada	$27.49	$57.91	$56.96	$65.29
Dentists:				
Manitoba	$8.57	$13.76	$19.63	$24.25
Canada	$8.49	$14.43	$18.95	$24.89

dentists' services rose 5% per year from 1960 to 1971, compared with physicians' 7%, but maintained that 5% pace from 1971 to 1982, reaching 5.6% in the first half part of the decade and slowing to 4.6% from 1976 to 1982. Spending on dentists' services in Manitoba rose a bit more slowly in the 1960's, accelerated to 7.4% per year in the early 1970's, but by 1982 was back at just below the national average.

These data reflect the substantial impact of Medicare on physician services expenditures. During the years of introduction, such expenditures rose rapidly; after introduction they stabilized or fell (in constant dollar terms). The drop in Manitoba's relative position prior to 1971 is a result of the very large increases in costs associated with the introduction of Medicare east of the Ottawa River, particularly the surge in Quebec, which pushed up the national average. But the 1971-76 drop is suggestive of a relatively tight control policy in Manitoba itself which held spending on physician services below inflation while Canada as a whole was keeping pace.

The Manitoba story in the decade from 1971 to 1982 can thus be encapsulated in several main points:

(i) Overall health spending per capita stays very close to national averages, despite a level of per capita income which is rising less rapidly than the Canada average, so that an increasing share of provincial income is devoted to health expenditures. This increase in the health care share, both absolutely and relative to the rest of Canada, all comes in the second half of the period, 1976-1982.

(ii) Institutional care takes a steadily increasing share of provincial income and of health spending, rising from about 5% below the national average in 1971 to about 10% above in 1982. (This, however, restores the relative position of 1960, when Manitoba was 8% above the national average). The most rapid growth, both absolutely and relative to the rest of Canada, is in the 1971-76 period.

(iii) Within the institutional sector, expenditures on personal care homes grew explosively in the early 1970's, almost doubling in real terms per capita, to reach 29.53% above an also rapidly growing national average. But this growth did not substitute for general and allied hospital expense, which grew in line with national averages. From 1976 to 1982, both hospital and personal care home expenses in Manitoba outpaced the Canada growth rates, continuing the relative and absolute expansion of institutional care. By 1982, total institutional spending per capita was $269.38 in constant 1971 dollars, up 60% percent in real terms since 1971, general and allied special hospital spending was up 56%, and personal care homes up over 200%.

(iv) In the professional services sector, downward pressure was concentrated on expenditure for physicians' services and that almost entirely in the early 1970's. In that period, physician expenditures per capita *fell* in Manitoba by about 12% in real terms, while holding level Canada-wide. From 1976 to 1982, physician expenditures grew in line with those in the rest of Canada but did not make up the lost ground. Other professional services expenses do not show any such pattern of restraint.

(v) As a summary of a summary from 1971 to 1982, *relative to the rest of Canada*, Manitoba personal care homes gained a lot early, and a bit more later, finishing a long way ahead. Hospitals held their position about 7% behind the national average from 1971 to 1976, then gained on it to reach 1982 only 3% behind. Institutions overall are ahead 10%. Physicians lost ground from 1971 to 1976, held level thereafter, to finish behind by about 12%.

CHAPTER III

ECONOMIC AND UTILIZATION INDICATORS UNDERLYING PER CAPITA HOSPITAL EXPENDITURES

Dollars do not provide health care, though they may pay for it. The chronicle of what has been spent, where, and on what, is important in that it indicates the levels and patterns of effort devoted by different groups at different times to paying for health care services. It does not describe what was bought, much less what should have been bought. Accordingly this chapter and the next will examine the patterns of servicing in the two major categories of health care services--general and allied special hospitals, and physicians--which in 1982 accounted for half of Manitoba's health spending (50.76%) and for whose financing the provincial government is almost totally responsible.

Tables III-1 and III-2 display bed availability, utilization, and unit costs in Manitoba and Canada, public general and allied special hospitals, for selected years from 1966 to (fiscal) 1982/83. These data underlie the institutional cost per capita data of Chapter II.

Cost-restraint pressures on hospital bed capacity Canada-wide are clearly evident after 1976. The roughly 1% per year growth of the late 1960's continued during the early part of the decade, but from 1976 to 1982 this was rolled back such that net growth over the decade as a whole was less than 2 1/2%. In Manitoba, capacity pressure seems to have developed slightly earlier so that the relative availability of beds in 1982/83 was about 5% below the national average.

But reductions in utilization were even more notable. Patient days per thousand population Canada-wide were unchanged between 1976 and 1982/83, after increasing 0.63% per year from 1971 to 1976 and 1.13% per year from 1966 to 1971. But in Manitoba, growth in the late 1960's was less than half the national rate, 0.5% per year, and since 1971 patient day use has fallen by 1.22% per year on average or 12.60% from 1971 to 1982/83.

Relative to national levels, Manitoba's utilization of public general and allied special hospitals has fallen nearly 15% since 1971,

TABLE III-1

Manitoba and Canada, Public General and Allied Special Hospitals,
Capacity and Utilization, Adult and Child,
Per Thousand Population, Selected Years 1966-1982/83

	1966	1971	1976	1982/83
Approved beds (rated beds prior to 1976):				
Manitoba	6.17	6.39	6.28	6.25
Canada	6.10	6.40	6.75	6.55
M/C	101.15	99.84	93.04	95.42
Patient-days:				
Manitoba	1850.5	1894.59	1764.05	1657.53
Canada	1809.0	1894.16	1953.91	1957.52
M/C	102.29	100.02	90.28	84.67
Separations:				
Manitoba	171.14	184.24	164.49	158.37
Canada	151.74	164.72	158.66	145.66
M/C	112.79	111.85	103.67	108.73
Average Length of Stay:				
Manitoba	10.81	10.28	10.72	10.47
Canada	11.92	11.50	12.32	13.44
M/C	90.69	89.39	87.01	77.90
Occupancy Rate:				
Manitoba	82.15%	81.21%	76.90%	72.68%
Canada	81.24%	81.09%	79.28%	81.23%
M/C	101.12	100.15	97.00	89.47

TABLE III-2

Manitoba and Canada, Public General and Allied Special Hospitals
Measures of Unit Costs, Selected Years 1966-1982/83

	1966	1971	1976	1982/83
Cost per Patient Day:				
Manitoba	$31.74	$56.99	$127.93	$286.30
Canada	$35.43	$61.75	$125.79	$246.50
M/C	89.59	92.29	101.70	116.15
Cost Per Separation:				
Manitoba	$342.79	$586.43	$1425.14	$2996.02
Canada	$418.08	$710.13	$1688.10	$3041.81
M/C	81.99	82.58	84.42	98.49
Cost Per Capita:				
Manitoba	$58.72	$108.08	$225.68	$474.48
Canada	$64.09	$116.99	$245.76	$480.75
M/C	91.62	92.38	91.83	98.69
Cost Per Patient Day ($1971):				
Manitoba	$38.43	$56.99	$79.86	$105.03
Canada	$42.89	$61.75	$78.52	$90.43
Cost Per Separation ($1971):				
Manitoba	$415.00	$586.43	$889.60	$1099.05
Canada	$506.15	$710.13	$1053.75	$1115.85
Cost Per Capita ($1971):				
Manitoba	$71.09	$108.08	$140.87	$174.06
Canada	$76.82	$116.99	$153.41	$176.36
Cost Per Bed ($1971):				
Manitoba	$11,522	$16,914	$22,404	$27,686
Canada	$12,593	$18,280	$22,699	$26,768
M/C	91.50	92.53	98.70	103.36

and nearly 20% since 1966. This relative decrease has been roughly equally split between average lengths of stay and separation rates per capita. Manitoba in 1966 and 1971 had a separation rate over 10% above national levels, and an average length of stay about 10% below. The provincial separation rate has fallen faster than the national average since 1971 (both rose at about the same rate from 1966-1971) and the provincial average length of stay has moved together with the national average but has risen less when the national average rises, and fallen more when the national average falls. From Table III-1, one might well conclude that Manitoba has been in the forefront of Canadian efforts to restrain the growth of hospital use and costs. The province's hospital utilization rates have been falling both in relative and absolute terms. Recalling (from Table II-2) that the personal care home sector has been growing very rapidly both absolutely and compared to the rest of Canada, particularly during the early 1970's when hospital use turned down in Manitoba and kept on rising elsewhere, one might further conclude that personal care homes have in fact served as a less intensive institutional substitute for hospital care.

Yet Table II-2 also shows that per capita spending in the hospital sector, net of funding of personal care homes, rose steadily through the 1970's at rates well above general inflation levels, and rose faster in Manitoba than elsewhere. If care in personal care homes were substituting for hospitalization in Manitoba, hospital costs in Manitoba should have risen less rapidly than elsewhere; but this has not been the case.

The data in Table III-1 on Manitoba and Canada bed capacity and utilization, beds and patient days per thousand population, can be used to derive implicit occupancy rates, and these are also shown in Table III-1. In 1971, occupancy rates (rated beds, general and allied special hospitals) were almost identical in Manitoba and in Canada. Yet by 1982/83, the Manitoba rate had fallen nearly 12% while the Canada rate was unchanged after a dip in the mid-1970's. It appears that Manitoba's bed capacity has not fallen as sharply at its utilization. When the beds per thousand population data in Table III-1 are divided into the hospital expenditure per capita figures (in constant, $1971), as reported in Table II-2, the resulting annual operating cost per bed estimates have grown faster for Manitoba than for Canada as a whole-- 53.7% from 1971 to 1982/83 as compared with 46.4% for Canada as a whole.

Table III-2 indicates why Manitoba hospital costs have not fallen, even relatively. While utilization of general and allied special hospitals was falling, costs per patient day and per separation were rising rapidly. Manitoba's costs per patient day grew 25.85% faster than the national average from 1971 to 1982/83, and this relative growth was slightly faster in the more recent years. Over the whole 1966-1982/83 period, while patient days per capita fell 17.23% relative to Canada, cost per day rose 29.65%, and in consequence costs per capita in Manitoba rose 7.73% faster than in the rest of Canada.

Of course, substitution of non-hospital care for the less acutely ill, for example those treated on a not-for-admission basis, should be expected to raise costs per day for the remainder, as the patients left behind will be the "sicker" or at least those requiring more extensive and expensive interventions. But a successful substitution program does not lead to increases in costs per hospital day which are proportionately more than the savings of hospital days. That finding indicates that total costs of the remaining "sicker" cases (not just costs per day) are increased. The hospital sector, though its patient day base is reduced, now absorbs more resources in total, not just per patient day. This does not represent cost-saving substitution!

Table III-2 shows the scale of these increases. Cost per patient day in Manitoba adjusted for general inflation rates rose 30.91% from 1976 to 1982, or 4.59% per year and twice the national rate of 2.30% per year. It has grown faster than the national cost over the whole period, but the differential is most pronounced after 1976 when the Canada-wide growth rate has been slowing. Cost per capita in Manitoba, adjusted for inflation, has risen 4.37% per year over the whole period since 1971, and 3.51% per year since 1976. In Canada, by contrast, the rates are 3.75% and 2.27%. Hospital care in Manitoba has, since 1971, become more expensive, relative both to general inflation and to the rest of Canada, at a rate sufficiently rapid as to absorb any savings which might have arisen from reduced utilization.

But the general and allied special hospital sector encompasses a wide diversity of institutions. Tables III-3 to III-6 disaggregate the sector, and provide a clearer picture both of the impact of Manitoba's commitment to personal care homes, and of the sources of cost differences between Manitoba and the rest of Canada.

Tables III-3 to III-6 taken together, enable the reader to trace out some of the reasons for Manitoba's relatively high per capita costs of hospital care. Table III-3 indicates that the relatively low rate of hospital utilization in 1982/83 is due to the virtual absence of the "allied special", primarily chronic and convalescent, hospital sector in Manitoba. Patient days in such hospitals were only 128.96 per thousand population compared with the Canada average of 493.31. This discrepancy is also shown in the 1976 data, but not in that of 1971 and 1966. The use of public general hospitals--the acute care sector--was 4.39% higher per capita in Manitoba in 1982/83, and 12.18% higher in 1976. It appears that the dramatic growth of spending on personal care homes in Manitoba in the early 1970's was associated with sharp cut-backs in the allied special hospital sector, but with substantial growth, not reduction, in use of public general hospitals.

Moreover, an unusually high proportion of this growth was in the high cost teaching hospital sector, where Manitoba utilization moved from 8.19% above the national average in 1971 to 40.42% above in 1976. By 1982/83 teaching hospital use in Manitoba had fallen off significantly, but was still 21.07% above the national average.

In the non-teaching sector, Manitoba's utilization rates also rose relative to the national average from 1971 to 1976, and fell back thereafter. But the proportion of beds in hospitals without long-term care units is much higher in Manitoba in all years.

One explanation, then, for Manitoba's relatively high cost per patient day is the above average utilization of acute care hospitals and particularly of teaching hospitals. The lowered use of hospitals associated with the expansion of the personal care sector was not a

TABLE III-3

Manitoba and Canada, General and Allied Special Hospitals Utilization (Days per 1000 Population) by Type of Hospital, Selected Years, 1966-1982/83

	1966	1971	1976	1982/83
General and Allied Special Hospitals:				
Manitoba	1850.5	1894.59	1764.05	1657.53
Canada	1809.0	1894.16	1953.90	1957.58
M/C	102.29	100.02	90.28	84.67
Public General Hospitals:				
Manitoba	1473.5	1509.64	1630.82	1528.57
Canada	1492.6	1556.97	1453.79	1464.27
M/C	98.72	96.96	112.18	104.39
Teaching Hospitals:				
Manitoba	534.8	501.99	614.90	552.45
Canada	465.2	464.00	437.90	456.31
M/C	114.96	108.19	140.42	121.07
Non-Teaching Hospitals with LTU's:				
Manitoba	102.0	114.06	261.99	302.50
Canada	326.6	357.82	514.14	664.60
M/C	31.23	31.88	50.96	45.52
Non-Teaching Hospitals with no LTU's:				
Manitoba	836.8	893.59	753.93	673.62
Canada	700.9	735.15	501.75	343.36
M/C	119.39	121.55	150.26	196.18
All Non-Teaching Hospitals:				
Manitoba	938.8	1007.65	1015.92	976.12
Canada	1027.5	1092.97	1015.89	1007.96
M/C	91.37	92.19	100.00	96.84

TABLE III-4

Manitoba and Canada, General and Allied Special Hospitals, Cost per Patient day by Type of Hospital, Selected Years, 1966-1982/83

	1966	1971	1976	1982/83
General and Allied Special Hospitals:				
Manitoba	$31.74	$56.99	$127.93	$286.30
Canada	$35.43	$61.75	$125.79	$246.50
M/C	89.59	92.29	101.70	116.51
Public General Hospitals:				
Manitoba	$32.71	$59.83	$132.08	$298.15
Canada	$37.75	$66.65	$143.16	$276.67
M/C	86.65	89.77	92.26	107.76
Teaching Hospitals:				
Manitoba	$39.17	$75.51	$166.66	$402.66
Canada	46.35	$83.19	$183.83	$355.76
M/C	84.51	90.77	90.66	113.18
All Non-Teaching Hospitals:				
Manitoba	$29.03	$52.02	$111.14	$239.00
Canada	$34.02	$59.63	$125.63	$240.67
M/C	85.33	87.24	88.47	99.31
Costs Per Patient Day ($1971) Public General Hospitals:				
Manitoba	$39.60	$59.83	$82.34	$108.73
Canada	$45.70	$66.65	89.25	$100.90
Teaching Hospitals:				
Manitoba	$47.42	$75.51	$103.90	$146.85
Canada	$56.11	$83.19	$114.61	$129.74
All Non-Teaching Hospitals:				
Manitoba	$35.15	$52.02	$69.29	$87.16
Canada	$41.19	$59.63	$78.32	$87.77

TABLE III-5

Manitoba and Canada, General and Allied Special Hospitals, Gross Salary and Wage Cost per Patient Day, by Type of Hospital, Selected Years, 1966-1982/83

	1966	1971	1976	1982/83
General and Allied Special Hospitals:				
Manitoba	$ 20.43	$38.52	$89.88	$194.15
Canada	$ 23.18	$41.88	$89.43	$169.48
M/C	88.14	91.98	100.50	114.56
Public General Hospitals:				
Manitoba	$ 20.74	$39.85	$92.38	$201.33
Canada	$ 24.55	$45.98	$101.47	$189.11
M/C	84.48	86.67	91.04	106.46
Teaching Hospitals:				
Manitoba	$ 25.35	$52.29	$122.42	$279.39
Canada	$ 30.45	$58.33	$129.78	$240.35
M/C	83.25	89.65	94.33	116.24
All Non-Teaching Hospitals:				
Manitoba	$ 18.12	$33.64	$74.21	$149.54
Canada	$ 21.98	$40.74	$89.27	$159.35
M/C	82.44	82.57	83.13	93.84
Wage and Salary Costs per Patient Day ($1971): Public General Hospitals:				
Manitoba	$ 25.11	$39.85	$57.59	$73.42
Canada	$ 29.72	$45.98	$63.26	$68.97
Teaching Hospitals:				
Manitoba	$ 30.69	$52.29	$76.32	$101.99
Canada	$ 36.86	$58.33	$80.91	$87.65
All Non-Teaching Hospitals:				
Manitoba	$ 21.94	$33.64	$46.27	$54.54
Canada	$ 26.61	$40.74	$55.65	$58.11

TABLE III-6

Manitoba and Canada, General and Allied Special Hospitals, Paid Hours per Patient Day, by Type of Hospital Selected Years, 1966-1982/83

	1966	1971	1976	1982/83
General and Allied Special Hospitals:				
Manitoba	13.5	13.76	15.89	17.02
Canada	13.3	13.28	13.61	13.77
M/C	101.50	103.61	116.75	123.60
Public General Hospitals:				
Manitoba	13.9	14.31	16.21	17.62
Canada	14.1	14.12	15.43	15.50
M/C	98.58	101.35	106.07	113.68
Teaching Hospitals:				
Manitoba	17.5	17.84	20.43	23.18
Canada	17.1	16.90	18.87	19.07
M/C	102.34	105.56	108.27	121.55
All Non-Teaching Hospitals:				
Manitoba	11.89	12.56	13.73	14.47
Canada	12.74	12.94	13.95	13.95
M/C	93.33	97.06	98.42	103.73

general shift from more to less intensive forms of institutional care. Rather, the lowest intensity forms of hospital care, chronic and convalescent, were cut back; but the most expensive forms of hospital care were substantially increased.

By itself, this increase would be expected to lead to higher costs per capita for care in public general hospitals. But it might also be expected to reduce costs per patient day in those hospitals, at least relative to the rest of the country. If teaching hospitals in Manitoba are drawing a larger share from the "pool" of patients and morbidities, then on average, patients in Manitoba teaching hospitals should be "less sick" than those in teaching hospitals in the rest of Canada. Further, non-teaching acute care hospitals in Manitoba might be expected to lose to teaching hospitals more of their "sickest" patients which, in the rest of Canada, they would expect to keep.

Yet Table III-4 does not bear out this expectation. In 1982/83, costs per patient day in Manitoba teaching hospitals were 13.18% above the national average, while utilization was 21.07% above, yielding a total difference in per capita cost of 37.03%. This is increased from the 27.30% difference of 1976 when Manitobans spent 9.34% less per patient day in teaching hospitals, but used 40.42% more of them. In 1966 and 1971, per capita teaching hospital expenditures in Manitoba were 97.15% and 98.20% of the national average. Apparently Manitoha teaching hospitals dramatically expanded their share of hospital utilization in the early 1970's without accepting any reduction in relative cost per patient day. Then in the second half of the decade they were able to expand their expenditure per patient day 24.84% faster than the national average, while accepting a reduction in share which brought them only halfway back to the national average.

Looked at another way, in constant dollar (1971) purchasing power, adjusting for inflation, per capita spending on teaching hospitals in Manitoba rose 114.03% from 1971 to 1982/83, the product of a 10.05% increase in patient days per capita and a 94.48% increase in the costs per patient day after inflation adjustment. From 1971 to 1976, teaching hospital use fell 10.15%, but the cost per patient day rose 42.34%. In

Canada as a whole (including Manitoba) the increase from 1971 to 1982/83 in teaching hospital costs per capita was only 53.37%, less than half as much as in Manitoba. And though cost increases slowed down after 1976 in both Manitoba and the rest of Canada, Manitoba continues to outpace the rest of Canada by a substantial margin.

Cost increases in the Manitoba non-teaching sector are much less pronounced, 62.31% from 1971 to 1981/83 in per capita, inflation-adjusted spending. The corresponding Canada figure, however, is only 35.74%. The increase in Manitoba is 74.34% greater than the Canada average, whereas in teaching hospitals it is 113.66% greater. The relatively more rapid expansion of teaching hospital costs in the 1970's and early 1980's is clearly a national phenomenon, but the much more rapid expansion of Manitoba costs is found in both teaching and non-teaching hospitals, though more pronounced in the former.

In total, Manitoba public general hospitals generated expenditures per patient day in 1982/83 which were 7.76% above the national average, on a utilization rate which was 4.39% above average, yielding total costs per capita which were 12.49% above average. This represents a steady climb since 1966. In 1976 Manitoba costs per capita were 3.50% above the national level, in 1971, 12.96% below, and in 1966, 14.46% below.

This expansion of the public general hospital sector thus absorbed any "savings" released by the shrinkage of the chronic and convalescent sector, so that public general and allied special costs per capita in 1982/83 were only 1.35% below the national average. The Manitoba hospital system costs as much without a long-term care sector as the rest of the country's does with one. Personal care homes appear to be a pure add-on. Yet the costs of the hospital system itself have moved up significantly in the late 1970's and early 1980's; in each of the three previous years reported per capita costs of all Manitoba hospitals were about 8% below national levels.

The major component of hospital costs is labour cost; any differentials in overall costs can be expected to show up in salaries and wages as well. Table III-5 reports gross salary and wage cost per patient day for selected years by class of hospital, which parallel the total cost data in Table III-4. The corresponding paid hours per patient day data are shown in Table III-6.

A comparison of Tables III-4 and III-5 indicates that the Manitoba cost differences apply to non-wage as well as to wage costs. Gross salaries and wages per patient day in all Manitoba hospitals in 1982/83 were 14.56% above national levels, compared with a 16.51% differential for all costs. Non-wage costs can thus be calculated as 19.64% higher. In public general hospitals the wage and non-wage differentials between Manitoba and Canada are 6.46% and 10.58%. But the pattern of differentials varies significantly between teaching and non-teaching hospitals. In the non-teaching hospitals, non-wage costs per patient day are 10.01% above national averages but wage costs are 6.16% below. In the teaching hospitals, non-wage costs are only 6.81% above average but wage costs are up 16.24%. While Manitoba's non-teaching hospitals have labour costs well below national averages, the teaching hospitals are well above.

A decade before, labour costs in Manitoba were about 10.35% below average in teaching hospitals, and 17.43% below average in non-teaching. In 1966, labour costs in both sectors were about 17% below national averages. In both sectors, increases in labour costs have outrun national averages, though the relative increase has been over twice as large in the teaching hospitals. Table III-6 shows the corresponding differences in labour inputs, which can be compared with Table III-5 to derive implicit costs per paid hour.

The most striking feature of Table III-6 is the much higher input of paid hours per patient day in Manitoba hospitals, compared with the national average. The 23.60% difference for all hospitals can be explained in part by the much smaller scale of the long-term care sector, which uses fewer hours per patient day, in Manitoba. But the 21.55% difference in teaching hospitals admits no such explanation. Moreover it should be recalled (from Table III-3) that utilization of teaching hospitals is also 21.07% greater in Manitoba so that, unless Manitobans as a whole are "sicker" than the Canadian average, the patient load of their teaching hospitals should be less "sick". In total, paid hours in teaching hospitals per resident of Manitoba were 47.16% higher in 1982/83 than the Canadian average--a rather remarkable figure.

By contrast Manitoba non-teaching hospitals' paid hours per patient day were only 3.73% above average, and utilization was 3.16% below average, yielding a use of hours per capita right on the Canadian average. Table III-6 indicates that paid hours in Manitoba non-teaching hospitals have over time caught up with a national average which was unchanged from 1976 to 1982/83.

But the really interesting changes are in teaching hospitals, an increase in paid hours of 29.93% from 1971 to 1982/83 while the national average rose only 12.84%. These ratios, in comparison with Table III-5, yield implicit relative wage rates. If paid hours per day in Manitoba teaching hospitals were 21.55% above average, but salary and wage costs were up only 16.24%, then wages per paid hour were 4.37% below national levels (116.24/121.55 = .9563). For all hospitals, the average differential was 7.31%, but for non-teaching hospitals it was down 9.53%. Thus, Manitoba hospitals paid less for their labour, but used more of it--in teaching hospitals, a lot more.

This implicit wage differential has been shrinking steadily over time in the teaching hospitals, and to some extent in the non-teaching hospitals as well. And the shrinkage has been most rapid since 1976. In 1976, Manitoba teaching hospitals paid 12.88% less per paid hour than the national average, and non-teaching hospitals paid 15.54% less. In 1971 the differentials were 15.07% and 14.93%, and in 1966, 18.65% and 11.67%. Thus a part of the escalation of Manitoba hospital costs relative to the national average might be explained as a "catch-up" of wages to national levels (which were themselves, however, outpacing general wage and salary increases as well as inflation rates). This catch-up was most successful in the teaching hospitals, where 77% of the 1966 gap was closed by 1982/83; the non-teaching hospitals closed only 18% of the 1966 gap in that period. But while wages were moving towards national levels, paid hours per patient day and patient days per capita, especially in the Manitoba teaching hospitals, have been moving out beyond the national levels by a substantial margin.

This pattern seems to hold in both halves of the 1971 to 1982/83 period, as well as from 1966 to 1971. From 1971 to 1976, labour input per patient day in Canadian hospitals was expanding, by 11.66% in teaching hospitals and 7.81% in non-teaching; 9.28% for all public general hospitals. But the Manitoba figures are 14.52% and 9.32%, or 13.28% for all public general. From 1976 to 1982/83 there was virtually no growth Canada-wide; 1.06% for teaching hospitals and none for non-teaching. But the Manitoba figures are a surprising 13.46% for teaching hospitals and 5.39% for non-teaching; 8.70% for all public general. The steady expansion in Manitoba's paid hours per patient day levels, like its heavy reliance on use of teaching hospitals, appear to be the primary factors underlying the relative costs of acute care hospital services. The phenomenon is not new; even in the 1966 to 1971 period when paid hours per patient day actually fell slightly in Canadian teaching hospitals, and were almost static over the hospital system as a whole, they were increasing in the Manitoba system. But the rate of increase in Manitoba's relative position has apparently been growing progressively more rapid over time.

Tables III-7 and III-8 provide an alternative way of looking at the same information. They report the percentage increases in per capita expenditures for public general hospitals and for teaching hospitals, in Manitoba and in Canada, over the periods 1966-71, 1971-76, and 1976-82/83. The Manitoba/Canada (M/C) rows report the relative increase or decrease (negative) in Manitoba levels relative to the national averages. Thus Table III-7, reports that in the three successive time periods, Manitoba per capita expenditures in public general hospitals rose faster than the national averages by 1.76%, 18.93%, and 8.69% respectively.

The total relative increase is (1.0176)(1.1893)(1.0869)-1=.3154 or 31.54% for teaching hospitals (Table III-8) Manitoba's expenditures outpaced Canada's by (1.0108)(1.2963)(1.0764)-1=.4104 or 41.04%, most of the difference coming in the early 1970's.

Tables III-7 and III-8 then partition these expenditure increases into increases in the general price level, as represented by the GNE

TABLE III-7

Sources of Increase in Public General Hospital Expenditures per Capita, Manitoba and Canada, 1966 to 1982/83

	1966-71	1971-76	1976-82/83
Total Increase:			
Manitoba	87.40%	138.50%	111.56%
Canada	84.16%	100.54%	94.64%
M/C	1.76%	18.93%	8.69%
General Inflation (Gross National Expenditure Deflator):			
	21.07%	60.40%	70.95%
Utilization Increase (Patient days per 1000):			
Manitoba	2.45%	8.03%	-6.27%
Canada	4.31%	-6.63%	0.72%
M/C	-1.78%	15.70%	-6.94%
Inflation-Adjusted Total Costs per Patient Day:			
Manitoba	51.09%	37.64%	32.03%
Canada	45.84%	33.90%	13.04%
M/C	3.60	2.79	16.80
Inflation-Adjusted Wage Costs per Patient Day:			
Manitoba	58.70%	44.52%	27.49%
Canada	54.71%	37.58%	9.03%
M/C	2.58	5.04	16.93
Paid Hours per Patient Day:			
Manitoba	2.95%	13.28%	8.70%
Canada	0.14%	9.28%	0.45%
M/C	2.81	3.66	8.21
Implicit Wage Cost per Paid Hour (Inflation-Adjusted):			
Manitoba	54.15%	27.58%	17.29%
Canada	54.49%	25.90%	8.54%
M/C	-0.22	1.33	8.06

TABLE III-8

Sources of Increase in Teaching Hospital Expenditures per Capita, Manitoba and Canada, 1966 to 1982/83

	1966-71	1971-76	1976-82/83
Total Increase:			
Manitoba	80.94%	170.34%	117.06%
Canada	79.01%	103.54%	101.65%
M/C	1.08	29.63	7.64
General Inflation (Gross National Expenditure Deflator):			
	21.07%	60.40%	70.95%
Utilization Increase:			
Manitoba	-6.14%	22.49%	-10.16%
Canada	-0.26%	-5.63%	4.20%
M/C	-5.90	29.80	-13.78
Inflation-Adjusted Total Costs per Patient Day:			
Manitoba	59.24%	37.60%	41.33%
Canada	48.26%	37.77%	13.20%
M/C	7.41	-0.12	24.85
Inflation-Adjusted Wage Costs per Patient Day:			
Manitoba	70.38%	45.96%	33.50%
Canada	58.25%	38.71%	8.33%
M/C	7.67	5.23	23.23
Paid Hours per Patient day:			
Manitoba	1.94%	14.52%	13.46%
Canada	-1.17%	11.66%	1.06%
M/C	3.15	2.56	12.27
Implicit Wage Cost per Paid Hour (Inflation-Adjusted):			
Manitoba	67.14%	27.45%	17.66%
Canada	60.12%	24.23%	7.19%
M/C	4.38	2.59	9.77
Average Weekly Wage (Industrial Composite) Inflation-Adjusted:			
Manitoba	21.13%	4.99%	-2.93%
Canada	18.01%	3.29%	0.12%
M/C	2.64	1.65	-3.05

deflator, and in utilization of services. What remains is the percentage increase in costs per patient day, adjusted for general inflation.

For public general hospitals all across Canada this cost has been increasing steadily; over the 1966-1982/83 period as a whole the increase has been 120.74% or an average of 5.07% per year. But in the post-1976 period such increases Canada-wide have slowed to 2.06% per year, while in Manitoba they have continued at 4.74%--more than double the national rate. Generally, in Canada, the escalation of hospital costs per day was cut back sharply after 1976; in Manitoba it has apparently kept on going.

This pattern of growth rates staying high in Manitoba in the late 1970's while dropping elsewhere holds for both wage and non-wage costs. In Manitoba as elsewhere, wage costs in public general hospitals outran non-wage costs by a large margin in the late 1960's. In the early 1970's, the differential between wage and non-wage cost increases grew in Manitoba, but fell in the rest of Canada. In the recent period, non-wage costs have outrun wage costs in Manitoba and Canada. Manitoba's cost increase relative to the rest of Canada, however, is almost identical for wages and for non-wage items.

Wage cost increases can be divided into increases in paid hours per patient day, and implicit wage costs per paid hour. As Table III-7 shows, paid hours per patient day in Manitoba hospitals outgrew those in Canada generally in all three periods, but particularly in the last few years. While in the rest of Canada paid hours per patient day in 1982/83 were virtually unchanged from 1976, in Manitoba they were up 8.70%. Over the 1966-82/83 period as a whole, paid hours per patient day in Manitoba hospitals rose 26.77%, 15.32% faster than the Canada average.

But relative wages also rose. Table III-7 reports increases in both implicit hospital wage costs per paid hour, and in the general level of industrial wages. Hospital wages have far outrun those in the general economy; this is a long-term national trend. Hospital workers gained 30.91% over 1966-71, 21.89% over 1971-76, and 8.41% in 1976-82/83. The trend appears finally to be slowing down--except in Manitoba. General weekly wages, inflation-adjusted, actually fell 2.93% in Manitoba from 1976 to 1982/83; but hospital wages rose 17.29% to finish with a 22.09%

relative gain compared to the rest of the labour force. Thus, Manitoba hospitals have been both adding staff and increasing their pay, faster than Canadian hospitals generally, in the last six years, even while Canadian hospitals have been continuing to escalate payments per hour faster than in the rest of the economy.

Increases in payments per paid hour include both increases in wage rates and changes in the mix of staff toward those with more, or more expensive skills and experience. Either, or both, of these factors could be at work. But the net result is still more, and more costly, labour inputs--at the same time non-labour costs per patient day are going up even faster.

Table III-8 repeats Table III-7, but for teaching hospitals only. It shows similar patterns but with more extreme movements. The surge in Manitoba teaching hospital utilization in the early 1970's, and the subsequent partial fallback, are much more pronounced than the similar patterns in use of all public general hospitals. In the most recent period, teaching hospital use has fallen in Manitoba, while rising somewhat in the rest of Canada, but as Table III-3 shows, Manitoba remains well ahead.

Table III-8 highlights the dramatic increase in costs per patient day in Manitoba teaching hospitals since 1976, after allowing for inflation. Such costs grew even faster than in the early 1970's, and grew three times as fast as the Canada averages. Moreover, though wage costs did not grow as fast as non-wage costs, that was true in the rest of Canada as well, so that wage costs in Manitoba teaching hospitals, per patient day, inflation-adjusted, grew almost four times as rapidly (33.50/8.33) as they did in the rest of Canada.

One should not, however, neglect the early 1970's. In this period the notable fact is that costs per patient-day grew as rapidly as elsewhere, even though utilization was expanding dramatically. As noted above, there was no tendency for "less sick" patients to be associated with less rapid increases in costs per day.

As in public general hospitals, Manitoba teaching hospitals in the post-1976 period generated both large increases in paid hours per patient day and large increases in wages per paid hour, even as general wages were falling in terms of real purchasing power. The teaching hospitals managed larger increases in paid hours per patient day than the non-teaching hospitals, and very slightly larger increases in wage costs per paid hour. But generally the pattern is similar.

One might note, however, that in the 1976-82/83 period, Manitoba teaching hospitals outstripped the national averages by a wider margin in both hour and earnings than did public general hospitals as a group.

CHAPTER IV

ECONOMIC AND UTILIZATION INDICATORS UNDERLYING PER CAPITA PHYSICIAN EXPENDITURES

The Manitoba data on per capita costs of physicians' services presented in Table II-3 can, like the hospital data, be separated into components in a way which reveals more information about the evolution of patterns of utilization by patients and servicing by physicians. Table IV-1 replicates per capita physician expenditure data from Table II-3, and compares it with data on changes in physicians' fee levels assembled from unpublished Health and Welfare sources.

Table IV-1 recalls the point noted in Table II-3, that per capita expenditure on physicians' services in Manitoba has been rising at a somewhat slower rate than in Canada generally, over the whole of the last 20 years. In 1960 (Table II-3) it was 10.29% above the national average; in 1966, 2.38% above, and by 1982, 12.12% below. This represents a fall in relative position of 25.5% over twenty-two years, a remarkable long-term trend. The fall was particularly marked in the 1971-76 period. Since 1976, however, Manitoba's position relative to the national average has been almost unchanged.

In Manitoba, as in the rest of Canada, per capita expenditures rose throughout the period examined. But since 1971, this is almost entirely the effect of general inflation. When expenditures on physicians' services are divided by changes in the Gross National Expenditure (GNE) deflator to yield constant dollar or real purchasing power changes, ($1971), it is seen that in the early 1970's physician services expenditures per capita in Manitoba actually fell quite sharply in real purchasing power terms. By 1982/83 they were back only to their 1971 level. In Canada as a whole, constant dollar expenditures were virtually flat from 1971 to 1976, thereafter they rose by 14.62% (2.30% per year) over the next six years. The Manitoba increase 1976-82 is almost identical, 14.10%.

But as Table IV-1 also shows, the decline in Manitoba's relative position is not a result of falling relative fee levels. The index of

TABLE IV-1

Manitoba and Canada, Per Capita Costs of Physicians' Services, In Current and Constant Dollars and Deflated for Fee Changes, Selected years, 1966 to 1982.

	1966	1971	1976	1982
Expenditure on Physicians' Services:				
Manitoba	$30.91	$57.11	$80.65	$157.32
Canada	$30.19	$57.91	$91.37	$179.02
M/C	102.38	98.62	88.27	87.88
Expenditure on Physicians' Services ($1971):				
Manitoba	$37.42	$57.11	$50.28	$57.37
Canada	$36.55	$57.91	$56.96	$65.29
Index of Physicians' Fee Schedules (Health & Welfare Canada):				
Manitoba	76.90	102.40	124.40	215.60
Canada	80.10	100.00	121.80	208.30
M/C	96.00	102.40	102.13	103.50
Index of Physicians/ Fee Schedules ($1971):				
Manitoba	93.10	102.40	77.56	78.63
Canada	96.97	100.00	75.94	75.97
Index of Per Capita Expenditure on Physicians' Services Adjusted for Fee Change (Canada 1971 = 100.0):				
Manitoba	69.41	96.31	111.95	126.00
Canada	65.08	100.00	129.54	148.41
M/C	106.65	96.31	86.42	84.90

physicians' fee schedules, province by province, compiled by the Department of National Health and Welfare, shows Manitoba consistently slightly above the national level from 1971 onwards, and slightly farther ahead in 1982 than in 1971. Prior to 1971 the fee schedule index is less reliable as a measure of fees actually collected by physicians; particularly during the period of introduction of Medicare, fees collected appear to have risen much faster than the increases in officially promulgated fee schedules. These earlier indices based on Health and Welfare and Consumer Price Index data show Manitoba fees below the national average in both 1966 and 1960 (by 4.00% and 6.72%). Thus, while physician expenditure per capita in Manitoba was rising less rapidly than in Canada as a whole, physician fees were rising slightly more rapidly. In the most recent period, 1976-82, this pattern continues; Manitoba fees gained 1.34% on the national average while expenditures fell behind by 0.44%.

Relative to the general price level, physicians' fees fell very sharply after 1971 in both Manitoba and Canada as a whole. The fee schedule index divided by the GNE deflator increases from 1966 to 1971; fee increases outpaced general inflation rates. But from 1971 to 1976 fees in real terms dropped by nearly a quarter, falling far behind rapid general inflation rates. Fee increases sped up after 1976, as did the inflation rate; "real" (constant purchasing power) fees were almost the same in 1982 as in 1976.

Table IV-1 combines expenditure and fee data to yield an index of apparent service utilization--per capita expenditures divided by the fee index. The dramatic increases in this index from 1966 to 1971 are overstated, by an amount which is difficult to determine with precision but is known to be significant because the fee schedule indices understate the rate of growth of physician fees during the period of introduction of the provincial Medicare plans. But from 1971 on it is quite clear that "real" utilization per capita, adjusted for fee change, is rising less rapidly in Manitoba than in the rest of Canada. And the indices available suggest that this is a continuation of a pre-1971 trend. From 1971 to 1982, per capita use of physicians' services in

Manitoba rose at 88.16% of the rate in Canada as a whole; from 1960 to 1971 it rose at 84.62%.

Of course, utilization was not falling--physicians' services per capita rose by 30.83% in Manitoba from 1971 to 1982. But they rose much faster--48.41%--in Canada as a whole. Expenditures rose less rapidly in Manitoba because per capita use was rising less rapidly.

This might suggest that the supply of physicians is growing less rapidly in Manitoba, but as Table IV-2 shows, this is not so. From 1966 to 1982 the increase in active civilian physicians per capita in Manitoba--44.37%--is effectively identical to the national increase of 44.30%. And the physician-to-population ratio has been consistent at or slightly above the national level. It dipped slightly below in 1976, but was back up in 1982.

Indeed, looking at the 1976-82 period, in Manitoba the increase in physicians per capita outpaced the national increase by 3.11%, while fees grew 1.07% faster, yet expenditures per capita grew slightly less fast. There were more doctors, charging higher fees, yet overall costs were lower (in relative terms).

The reconciliation, therefore, has to take place in the volume of services (expenditures divided by the index of fees) per active civilian physician. As shown in Table IV-2, this index has been rising much less rapidly in Manitoba, and has fallen from 5.74% below the national average in 1971 to 17.39% below in 1982. In 1966 it was 3.84% above, and in 1960 (not tabulated, as the fee indices are rather uncertain) it was calculated as 8.35% above.

It is tempting to describe this index as a measure of physician "productivity", and to suggest that Manitoba physicians must work fewer hours, or hire fewer assistants, or be less efficient or energetic, than physicians in the rest of Canada. But this is not necessarily correct; it is only one possible interpretation. It must be recalled that fee-adjusted billings per physician have risen in Manitoba, though by only 3.19% from 1971 to 1982, or 0.29% per year on average. The increase in the country as a whole has been much faster, 17.75% or 1.50% per year, but almost all of that increase is pre-1976.

TABLE IV-2

Manitoba and Canada, Active Civilian Physicians Per Capita, And Indices of Workload and Earnings per Physician, Selected Years, 1960-1982

	1966	1971	1976	1982
Active Civilian Physicians (per 1000 population):				
Manitoba	1.361	1.550	1.727	1.965
Canada	1.325	1.517	1.733	1.912
M/C	102.73	102.17	99.65	102.75
Index of Utilization (adjusted for fee change) per Physician (Canada 1971 = 100):				
Manitoba	77.37	94.27	98.34	97.27
Canada	74.41	100.00	113.39	117.75
M/C	103.84	94.27	86.73	82.61
Index of Expenditure per Physician (Canada 1971 = 100):				
Manitoba	59.49	96.52	122.33	209.73
Canada	59.69	100.00	138.11	245.27
M/C	99.66	96.52	88.57	85.51
Index of Expenditure per Physician ($1971) (Canada, 1971 = 100):				
Manitoba	72.03	96.52	76.36	76.94
Canada	72.27	100.00	86.21	89.97
Index of Physician Net Incomes, ($1971) (Canada, 1971 = 100):				
Manitoba	73.77	99.61	68.96	n.a.
Canada	76.49	100.00	77.82	n.a.
M/C	96.43	99.61	88.61	
Index of Physician Net Professional Incomes, National Health & Welfare Estimates, ($1971) (Canada, 1971 = 100):				
Manitoba	---	99.61	72.13	77.67
Canada*	---	100.00	82.48	90.77
M/C	---	99.61	87.45	85.57
Index of Physician Gross Professional Incomes, National Health & Welfare Estimates ($1971) (Canada, 1971 = 100):				
Manitoba	---	99.46	82.06	87.80
Canada	---	100.00	88.54	99.42
M/C	---	99.46	92.68	88.31

*Excludes Quebec

A critical factor in such increases is the structure of the provincial fee schedules. Schedules with several different office visit classifications enable physicians to reclassify visits so as to increase reimbursement. Schedules which permit numerous procedures to be billed additional to, rather than inclusive in, office visit rates, encourage procedural multiplication and "a la carte billing". A loose schedule permits billings per physician to rise much more rapidly than fee levels; while a tight one binds them together. Thus the very low rate of increase in fee-adjusted billings per physician in Manitoba may reflect relatively tighter fee schedule negotiations which provide less opportunity for "fee creep" and "a la carte billing", rather than differentials in physician energy or productivity.

Whatever the source of the discrepancy, a lower rate of increase in services per physician should translate into lower levels of average incomes. Table IV-2, therefore, presents physician income data as a check on services per physician data.

To place these on a comparable basis, an index is calculated of expenditure per physician, unadjusted for fee change, found by dividing expenditures per capita by physicians per capita and then standardizing on Canada, 1971 = 100.00. This index shows that total expenditure per active civilian physician (the source of gross receipts per physician) in Manitoba was 3.48% below the national average in 1971, but 14.49% below in 1982.

This index is then adjusted for changes in the general level of inflation, showing the sharp fall in real expenditures per physician during the early 1970's. In Canada as a whole, constant dollar expenditures per physician fell 13.79%, in Manitoba they fell 20.89%. Yet constant dollar fees fell by about the same amount in Manitoba as in Canada, and the physician supply per capita in Manitoba grew somewhat less fast than in the rest of Canada during this period. From 1976 to 1982, constant dollar expenditures per physician increased by 4.36% in Canada as a whole, but only 0.76% in Manitoba.

This index can then be compared with average net physician incomes from taxation statistics which, however, apply only to self-employed physicians in fee-for-service practice, and include income from all sources. The net income data show similar patterns, of much sharper decreases in Manitoba, and suggest overall larger drops in receipts per physician in Canada and in Manitoba.

Over the last ten years, however, officials in National Health and Welfare have observed what is believed to be increasing biases in the data drawn from taxation returns, due to changes in physicians' financial and tax planning strategies. Officials have, therefore, prepared alternative income estimates (income from professional practice only, not from all sources) both gross and net, which are also presented in Table IV-2.

The net income estimates from the Department of National Health and Welfare follow the pattern of expenditures per average civilian physician very closely. But the estimates of gross receipts show both smaller decreases and a smaller discrepancy between Manitoba and Canada. This is somewhat puzzling, as in principle, expenditures should most closely match gross receipts. But it must be kept in mind that the physician denominators are different for the two sources.

Table IV-3 provides a different perspective on the same data, reporting rates of change over the three periods 1966-71, 1971-76, and 1976-82. The M/C rows measure the percentage by which the Manitoba value rose or fell (negative) compared with the Canada values. These are cumulative; thus it is possible to calculate that total per capita expenditures on physicians' services in Manitoba fell by 3.68% relative to the national level from 1966 to 1971, 10.50% from 1971 to 1976, and 0.44% from 1976 to 1982, i.e., by 1-(.9632)(.8950)(.9956)=.1417, or 14.17% over the period as a whole.

The three time periods reported in Table IV-3 show distinctly different patterns of expenditure behaviour. The 1966-71 period was that of the introduction of universal public insurance for physician expenses, in Manitoba and all across Canada (except Saskatchewan, where it was put in place in 1962). The 1971-76 period was a post-Medicare adjustment, but the 1976-82 period suggests an adaptation to some degree of equilibrium.

TABLE IV-3

Sources of Increase in Physician Expenditures per Capita, Manitoba and Canada, 1966 to 1982

	1966-71	1971-76	1976-82/83
Total Increase:			
Manitoba	84.76%	41.22%	95.07%
Canada	91.82%	57.78%	95.93%
M/C	-3.68	-10.50	-0.44
General Inflation (Gross National Expenditures Deflator):			
	21.07%	60.20%	70.16%
Physicians' Fee Index (National Health & Welfare):			
Manitoba	33.16%	21.48%	73.31%
Canada	24.84%	21.80%	71.02%
M/C	6.66	-0.26	1.34
Physicians' Fees Relative to General Price Level:			
Manitoba	9.99%	-24.17%	1.85%
Canada	3.11%	-23.97%	0.50%
Apparent Utilization Per Capita:			
Manitoba	38.76%	16.24%	12.56%
Canada	53.66%	29.54%	14.57%
M/C	-9.70	-10.27	-1.75
Physicians Per Capita			
Manitoba	13.89%	11.42%	13.78%
Canada	14.49%	14.24%	10.33%
M/C	-0.52	-2.47	3.13
Apparent Utilization per Physician (Fee-adjusted billings):			
Manitoba	21.84%	4.32%	-1.07%
Canada	34.21%	13.39%	3.84%
M/C	-9.22	-8.00	-4.73

In the period of introduction of Medicare, physicians' services expenditures increased very rapidly and far outran what now appears as a rather modest general inflation rate of 3.90% per year. Physician fee schedules outpaced inflation, and actual fees collected went up even faster. Apparent "utilization" soared, both per capita and per physician; Table IV-3 shows that if the increase in official fee schedules truly represented increases in actual fees collected, then service output per physician, Canada-wide, would have risen 34.21% in five years or 6.06% per year! In fact as much as 3-4% of that 6% was probably disguised increase in rates of fees collected.

Relative to the Canadian averages, Manitoba physicians received somewhat larger increases in fee schedules, but generated smaller increases in (apparent) utilization per capita and per physician. Numbers of physicians per capita in Manitoba grew at almost the same rate as in the rest of the country, but apparent output per physician fell behind (though still growing) by 9.70%. This more than offset the slightly more rapid increase in fees, so that overall expenditures per capita on physicians' services grew slightly less rapidly in Manitoba.

In the post-Medicare adjustment period, 1971-76, general inflation rates increased by two-and-a-half times to 9.91% per year, and outran increases in physicians' fees by a large margin, all across Canada. Manitoba fee increases are virtually identical to the Canadian average. The number of physicians per capita in Canada rises by almost exactly the same amount as in 1966-71, though Manitoba falls behind Canada as a whole by 2.47%.

But the big difference is again, the much lower rate of increase of output per physician in Manitoba. On average, billings per Canadian physician rose by 13.39% in this period, or 2.55% per year, over and above the 21.80% increase in fees. Physicians thus recouped some, though by no means all, of the losses from the dramatic fall in the real value of fees. But in Manitoba this increase was almost entirely absent. Utilization or output levels per physician rose only 4.32% over five years, or 0.85% per year, hence, the significant drop in per capita expenditures in Manitoba both in real purchasing power terms, and relative to the rest of Canada.

In the 1976-82 period, the pattern seems more stable. Per capita expenditures increased by almost identical amounts in Manitoba and in the rest of Canada. General inflation rates have averaged almost the same over this period as in the early 1970's (70.95% over six years averages to 9.35% per year), though year-to-year rates have fluctuated. But physician fees have kept pace--9.60% per year in Manitoba and 9.36% Canada-wide. Again Manitoba fees have moved a little ahead of the Canada average, but the difference is small. And the growth of the physician-to-population ratio has speeded up in Manitoba, while the Canada ratio is increasing at a slower rate, reflecting the cut-back in physician immigration.

The big change is in the growth of output per physician. This has dropped sharply, from the 2.55% per year of the 1971-76 period (and the badly overstated 6.06% of 1966-71) to a remarkably low 0.63% per year. In Manitoba this measure actually falls, though by a very small amount. Yet this change preserves the earlier pattern of output per physician (fee-adjusted) consistently rising less rapidly in Manitoba than in the rest of Canada.

If this change represents a maturing of the reimbursement process, or of physician billing patterns, such that physicians either will not or cannot increase billings much faster than the rate of fee increase, then two implications follow. First, physicians will be very strongly motivated to ensure that their fee increases do not again drop behind inflation rates. That is consistent with the much more aggressive fee bargaining of the 1980's, all over Canada, and the observation that 1983 fee increases were well above inflation rates. If inflation is, as forecast, much slower in the 1980's, erosion of "real" fees will be easier for physician bargainers to prevent.

But if output or workload per physician remains on average fairly constant, and physician fees move in future more or less with general inflation rates, then it follows that increases in inflation-adjusted per capita expenditure on physicians' services will move in future more or less in line with the physician-to-population ratio.

That is the only variable left. The stabilization of constant dollar fees and of output per physician means that increases in physician supply will translate more or less directly into increases in per capita costs. As Table IV-3 shows, that is what happened in the 1976-82 period. There was a bit of slippage in the Canadian average, but in Manitoba a 13.78% increase in physicians per capita led to a 12.56% increase in utilization per capita and (after inflation) a 14.64% increase in real expenditure per capita.

CHAPTER V

MEDICAL SERVICES UTILIZATION FROM 1971/72-1981/82: THE PATIENTS' SIDE OF THE LEDGER

BACKGROUND

In this chapter, data are organized on the basis of the residence of patients, irrespective of where they received medical care in Manitoba. Unless specifically noted, all of the data in this chapter are based on all of the medical services utilization of Manitoba residents which are reimbursed on a fee-for-service basis by the Manitoba Health Services Commission.

As a background to the data on medical utilization to be examined in subsequent tables, the data in Table V-1 show the changes over time in the physician-to-population ratio for Manitoba using alternative definitions. The data in the first column relate to physicians with gross revenues in excess of $20,000 in 1981/82 fee dollars and excludes radiologists, pathologists and anesthetists. The purpose of using constant 1981/82 fee dollars is to eliminate the price variable in the analysis in order to examine changes which relate to volume changes, or what is termed utilization. This should not be confused with the inflation rate because fee changes may not have changed at the same rate as inflation.

The data in Table V-1 show that there has been an increase in the physician-to-population ratio over the ten year period, irrespective of which definition is utilized. In all instances the rate of increase in the ratios was greatest in the first five year period from 1971/72-1976/77. The most conservative ratio based on active civilian physicians shows an increase in the physician-to-population ratio of 19.4% over the ten years, compared to 24.9% for physicians with gross revenues in excess of $20,000 in 1981/82 fee dollars, and 22.5% for active civil physicians less interns and residents. Depending upon the definition, the physician-to-population ratio grew 20-25% over the ten years and the rate of growth in all cases was greatest in the first five years.

TABLE V-1

Physician-to-Population Ratios For Manitoba - Alternative Physician Definitions

	Physicians with Gross Revenues in excess of $20,000 in 1981/82 Fee Dollars During Fiscal Year Beginning April 1 (a)	Active[*] Civilian Physicians as of December 31	Active Civilian Physicians Less Interns & Residents as of December 31
1971	1:1118	1:645	1:795
1976	1:953	1:579	1:694
1981	1:895	1:540	1:649
1983	n.a.	1:500	n.a.
Average Annual Percent Change			
71 to 76	3.25%	2.18%	2.75%
76 to 81	1.26%	1.40%	1.35%
71 to 81	2.25%	1.79%	2.05%
81 to 83	n.a.	3.92%	n.a.

(a) Excludes Radiologists, Pathologists and Anesthetists.

Sources: Manitoba Health Services Commission
Canada Health Manpower Inventory, 1983 Unpublished Statistics
From Health and Welfare Canada.

[*] Active civilian physicians are defined as civilian physicians - whether or not registered, whether or not in private practice, whether or not involved in direct patient care - with a known address in Canada at the end of the year. Excluded are retired physicians, those reported as being abroad, those in the Armed Forces, or those with a (temporarily) unknown address in Canada.

n.a. Not available

If one looks at the average annual increase in the active civilian physician-to-population ratio from 1981 to 1983 one finds that the increase of 3.92% is greater than the increases seen in the previous ten years. Extrapolating this to the next ten years implies an increase in the physician-to-population ratio of 46.9% or an active civilian physician-to-population ratio in 1993 of 1:340.

If this speeding up of the rate of increase in the active civilian physician-to-population ratio in the past two years continues into the future, this will have a major impact on Medicare if the experience of the past ten years is any indication as to what can be expected in the future. In examining the utilization of medical services, the following data are used:

a) Population - Statistics Canada population data are utilized unless stated otherwise.

b) Discrete Patient Count (DPC) - Defined as the number of people who have seen a physician at least once during a fiscal year (April 1 - March 31).

c) Apparent Patient Count (APC) - Defined as the sum of the individual patient loads of each of the physicians in the province.

d) Average Number of Physicians Seen - This is analogous to the patient load of a physician, but seen from the perspective of the patient. It is the number of physicians a patient has seen at least once during the year. This also includes radiologists, pathologists and anesthetists even though the patient may not have physically "seen" the physician. It can be calculated by dividing APC by DPC.

The data provided in Table V-2 show the average cost per discrete patient for four age groups and by the residence of the patient. The data are also in constant 1981/82 fee dollars which means that the changes seen are utilization changes, or alternatively, changes in the volume of services provided to people in each region who saw a physician at least once during any given year.

TABLE V-2

Average Cost Per Discrete Patient by Age Groups for the Residents of Manitoba Constant 1981/82 Level of Fees For All Years

WINNIPEG RESIDENTS	Average Cost Per Discrete Patient			Percent Change		
Age Group	1971/72	1976/77	1981/82	71-76	76-81	71-81
0-14	76.84	84.88	91.74	10.46	8.08	19.39
15-64	146.94	157.36	167.93	7.09	6.72	14.29
65-84	227.27	262.36	304.55	15.44	16.08	34.00
85+	232.59	294.49	360.94	26.61	22.57	55.18
Total	$136.22	$151.28	$168.49	11.06	11.37	23.69
BRANDON RESIDENTS						
0-14	64.85	69.38	86.80	6.99	25.10	33.85
15-64	128.35	127.44	141.65	-0.71	11.15	10.36
65-84	205.04	215.96	249.65	5.33	15.60	21.76
85+	195.80	225.99	295.11	15.42	30.59	50.72
Total	$120.41	$123.99	$144.73	2.97	16.73	20.20
RURAL RESIDENTS						
0-14	69.28	75.21	82.48	8.55	9.67	19.05
15-64	117.99	121.45	129.24	2.93	6.42	9.54
65-84	179.78	197.34	218.00	9.77	10.47	21.26
85+	204.84	231.21	259.81	12.87	12.37	26.84
Total	$109.96	$117.00	$128.59	6.40	9.90	16.94
MANITOBA RESIDENTS						
0-14	73.06	80.10	87.47	9.64	9.20	19.73
15-64	134.66	142.82	152.37	6.06	6.69	13.15
65-84	205.78	233.80	267.27	13.62	14.31	29.88
85+	219.38	266.64	316.98	21.54	18.88	44.49
Total	$124.67	$136.76	$151.80	9.69	11.00	21.76

For the province as a whole, the cost per discrete patient of medical services increased by 21.76% over the ten years with the larger increase of 11.0% occurring in the second half of the decade. The residents of Winnipeg had the highest cost per discrete patient in 1971/72 of $136.22, some 9.3% higher than the Manitoba average. By 1981/82 their average cost per discrete patient after discounting for fee schedule increases had risen by 23.69% to $168.49, slightly widening the gap over the Manitoba average to 11.00%.

The rate of increase in the cost per discrete patient of Winnipeg residents was almost evenly split between the first and second half of the decade at 11.06% and 11.37% respectively. The rate of increase for Brandon residents accelerated from 2.97% in the first half to 16.73% in the second half. For residents of rural Manitoba the rate of increase in the cost per discrete patient was 6.4% in the first five years and 9.9% in the last five years for the lowest increase of 16.94% over the ten years.

In 1971/72 rural residents had an average cost per discrete patient that was 19.3% lower than for Winnipeg residents, but by 1981/82 rural residents were 23.7% lower than for Winnipeg residents.

Examining the cost per discrete patient by age groups shows that there have been major cost increases amongst the elderly anywhere from 21.3% to 55.2%, depending on residence and age cohort. Again the rate of increase in costs per discrete patient was higher for residents of Winnipeg and Brandon than for rural residents. Not only has the proportion of the elderly in Manitoba increased over the ten years, but the costs per discrete patient have increased dramatically over that time.

Perusal of Table V-3 highlights shifts in per capita costs between urban and rural residents. When examined, per capita costs by age groups for residents of Winnipeg relative to those of rural residents, there is a growing differential in per capita costs in favour of Winnipeg residents. This differential is not uniformly distributed and the gap widens in favour of Winnipeggers who are in the elderly cohorts.

TABLE V-3

Ratios of Average Cost Per Discrete Patient by Age Groups for the Residents of Manitoba Constant 1981/82 Level of Fees for All Years

WINNIPEG RESIDENTS	Ratios of Average Cost Per Discrete Patient			Percent Change		
	RURAL RESIDENTS = 100					
Age Group	1971/72	1976/77	1981/82	71-76	76-81	71-81
0-14	110.9	112.9	111.2	1.8	-1.4	0.3
15-64	124.5	129.6	129.9	4.0	0.3	4.3
65-84	126.4	132.9	139.7	5.2	5.1	10.5
85+	113.5	127.4	138.9	12.2	9.1	22.3
Total	123.9	129.3	131.0	4.4	1.3	5.8

BRANDON RESIDENTS	RURAL RESIDENTS = 100					
Age Group	1971/72	1976/77	1981/82	71-72	76-81	71-81
0-14	93.6	92.3	105.2	-1.4	14.1	12.4
15-64	108.8	104.9	109.6	-3.5	4.4	0.7
65-84	114.0	109.4	114.5	-4.0	4.6	0.4
85+	95.6	97.7	113.6	2.3	16.2	18.8
Total	109.5	106.0	112.6	-3.2	6.2	2.8

WINNIPEG RESIDENTS	BRANDON RESIDENTS = 100					
Age Group	1971/72	1976/77	1981/82	71-76	76-81	71-81
0-14	118.5	122.3	105.7	3.2	-13.6	-10.8
15-64	114.5	123.5	118.6	7.9	-4.0	3.6
65-84	110.8	121.5	122.0	9.6	0.4	10.1
85+	118.8	130.3	122.3	9.7	-6.1	3.0
Total	113.1	122.0	116.4	7.8	-4.6	2.9

In the case of Brandon residents relative to rural residents the gap is almost unchanged for the age groups 15-64 or 65-84, but has increased in favour of Brandon residents in the younger age group 0-14 and the older age group 85+.

In comparing Winnipeg residents with Brandon residents, the differential for the youngest age cohort, 0-14, diminishes, and for the age group 65-84, increases in favour of Winnipeg residents.

As well as this urban/rural shift in favour of the urban elderly, Table V-2 illustrates that the aged/young gap for Manitoba has increased from a ratio of 3:1 to 3.6:1 over the ten years.

If the medical services system is in fact need-driven it is interesting that the gap in per capita costs is increasing in favour of the urban elderly when there would appear to be no reason to expect anything other than similar growth patterns between the urban and rural elderly.

Since the population of Manitoba has become more elderly over the past ten years it is important that the impact of the aging of the population be segregated in order to demonstrate to what extent these cost increases are an aging phenomenon.

In Table V-4 data by region for 1971/72 and 1981/82 are provided for the per capita costs of medical services in constant 1981/82 fee dollars in an unadjusted format and in an age-sex adjusted* format. The purpose of age-sex adjusting is to segregate the impact of an increasing proportion of elderly in Manitoba over this ten year period. Two age-sex adjustments have been performed, one which age-sex adjusts 1971/72 medical utilization to 1981/82 population and vice versa where 1981/82 medical utilization is age-sex adjusted to the 1971/72 population.

From Table V-4 it can be seen that the cost per capita of medical services in constant 1981/82 fee dollars has increased from $100.89 in 1971/72 to $131.34 in 1981/82. This represents a real increase of 30.2%

*Age-sex adjustment standardizes data so that changes in rates reflect changes other than those due to changes in the age and sex composition of the population concerned.

TABLE V-4

Ten-Year Comparison of Per Capita Costs of Medical Services Constant 1981/82 Fee Dollars

	1971/72	1981/82	Percent Change
Winnipeg	$110.29	$148.30	34.5
Brandon	103.19	138.56	34.3
Rural	88.54	107.61	21.5
Manitoba	$100.89	$131.34	30.2

Age-Sex Adjusted Per Capita Costs of Medical Services Constant 1981/82 Fee Dollars

	1971/72*	1981/82**	Percent Change
Winnipeg	$114.64	$142.47	24.3
Brandon	106.90	134.44	25.8
Rural	92.97	102.96	10.7
Manitoba	$105.31	$125.87	19.5

Percentage Net Impact of an Aging Population On Per Capita Costs of Medical Services

	1971/72*	1981/82**
Winnipeg	3.94%	-3.93%
Brandon	3.60	-2.97
Rural	5.00	-4.32
Manitoba	4.38%	-4.16%

Percentage Net Impact of Factors Other Than Aging on Per Capita Costs of Medical Services

	1971/72*	1981/82**
Winnipeg	29.36%	29.18%
Brandon	29.62	30.28
Rural	15.75	16.29
Manitoba	24.72%	24.76%

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*Age-sex adjusted to 1981 population of each region.
**Age-sex adjusted to 1971 population of each region.

in medical services per capita provided to the residents of Manitoba over a ten year period or an average annual increase of 2.7% per capita.

Though starting from different bases, the rate of increase in per capita costs during this ten year span was almost identical for the residents of Brandon and Winnipeg at 34.3% and 34.5% respectively. The rate of increase for rural residents was lower at 21.5% for the ten years. Comparing these increases on an average annual basis, the per capita costs for rural residents grew in real terms by 2.0% per year compared to 3.0% for residents of Winnipeg and Brandon. This is a full percentage point lower for rural residents or a growth rate that is two-thirds that of urban residents. The result of these different growth rates is that the gap in per capita costs between residents of rural Manitoba and Winnipeggers increased from 24.6% in 1971/72 to 37.8% in 1981/82.

The extent to which per capita cost increases are driven by the aging of the population can be seen from data in Table V-4. If 1971/72 data are age-sex adjusted to the 1981/82 population, per capita costs would have been 4.38% higher at $105.31 age-sex adjusted compared to $100.89 unadjusted. On the other hand, if 1981/82 per capita costs were age-sex adjusted to the 1971/72 population, per capita costs in 1981/82 would have been 4.2% lower at $125.87 compared to $131.34. The impact of an aging population on costs were slightly different across regions but not dramatically so.

Clearly the aging of the population has had some impact on medical services costs per capita. However, in comparison to the total increase during these ten years of 30.2%, a 4.4% increase due to aging still leaves a rather large proportion of the increase, namely 24.72%, that requires further explanation. Therefore, at least on the medical services side of health care costs in Manitoba, it cannot be argued that the aging of the population has been a significant factor in per capita cost increases over the past ten years.

Perusal of Table V-5 shows that there has been an increase in the percentage of the population that has at least one contact with a physician during the year. In 1981/82, 86.5% of the Manitoba population

TABLE V-5

Comparison of the Apparent Patient Count and the Discrete Patient Count by Residence of Patients

Residence of Patients	Apparent Patient Count	Discrete Patient Count	Average Number of Physicians Seen	Population	Ratio APC/ Pop.	Percent DPC/ Pop.
Winnipeg:						
1971/72	1,309,703	437,434	2.99	540,265	2.42	81.0
1976/77	1,676,091	499,686	3.35	566,813	2.96	88.2
1981/82	1,745,469	502,464	3.47	570,845	3.06	88.0
Percent Change:						
71-76	27.97	14.23	12.03	4.91	21.98	8.88
76-81	4.14	0.56	3.56	0.71	3.40	-0.15
71-81	33.27	14.87	16.02	5.66	26.13	8.71
Brandon:						
1971/72	71,421	26,695	2.68	31,150	2.29	85.7
1976/77	97,015	33,071	2.93	34,901	2.78	94.8
1981/82	108,525	34,694	3.13	36,240	2.99	95.7
Percent Change:						
71-76	35.84	23.88	9.65	12.04	21.24	10.57
76-81	11.86	4.91	6.63	3.84	7.73	1.03
71-81	51.95	29.96	16.92	16.34	30.61	11.71
Rural:						
1971/72	736,954	335,641	2.20	416,830	1.77	80.5
1976/77	814,877	346,016	2.36	419,792	1.94	82.4
1981/82	890,437	350,771	2.54	419,160	2.12	83.7
Percent Change:						
71-76	10.57	3.09	7.26	0.71	9.79	2.36
76-81	9.27	1.37	7.79	-0.15	9.44	1.53
71-81	20.83	4.51	15.61	0.56	20.16	3.93
Manitoba:						
1971/72	2,118,078	799,770	2.65	988,245	2.14	80.9
1976/77	2,587,983	878,773	2.94	1,021,506	2.53	86.0
1981/82	2,744,431	887,929	3.09	1,026,245	2.67	86.5
Percent Change:						
71-76	22.19	9.88	11.20	3.37	18.21	6.30
76-81	6.05	1.04	4.95	0.46	5.56	0.58
71-81	29.57	11.02	16.71	3.85	24.77	6.91

Note: Data includes medical services provided by all physicians in Manitoba including Radiologists, Pathologists, Anesthetists and those with gross revenues less than $20,000 in 1981/82 fee dollars.

had seen a physician during the year versus 80.9% in 1971/72. Almost all of that increase occurred from 1971/72 to 1976/77 which also coincided with a large increase in the physician-to-population ratio of 17.3% compared to 6.5% from 1976/77 to 1981/82. This increase in the discrete patient count relative to population was not evenly distributed between the urban areas, Winnipeg and Brandon, and the rural areas. The percentage of the population seeing a physician at least once increased by only 3.9% over the 10 years in the rural areas, but increased by 8.7% in Winnipeg and 11.7% in Brandon. By 1981/82, 95.7% of the people in Brandon were seeing a physician at least once during the year compared to 88.0% of Winnipeggers and 83.7% of the rural population. More than 90% of these increases took place in the first five years.

As the discrete patient count increased so did the apparent patient count, but at over twice the rate of increase of the discrete patient count. Since the apparent patient count measures the total patient load of all physicians, this implies that the average number of physicians seen per patient was also rising during these 10 years. Examination of Table V-5 does show that the average number of physicians seen increased from 2.65 physicians in 1971/72 for all the residents of Manitoba to 2.94 in 1976/77, an increase of 11.2%. From 1976/77 to 1981/82 the increase was only 5.0% to reach the level of 3.09 physicians seen per patient. Interestingly, the regional differences are not very great. In the first five years the increase in the average numer of physicians seen was the highest in Winnipeg at 12.0%, followed by Brandon at 9.7%, then rural Manitoba at 7.3%. In rural Manitoba the rate of increase in the average number of physicians seen is evenly split between the first and second half of the ten year period.

The information in Table V-6 provides a further breakdown of the average number of physicians seen, on data excluding Radiology, Pathology, Anesthesia, and physicians with gross revenues less that $20,000 in constant 1981/82 fee dollars. In this category the rate of increase over the ten years is 12.46% which is lower than for all physicians combined with a rate of increase of 16.71%. Excluding radiology, pathology and anesthesia reduces the rate of increase in the

TABLE V-6

Disaggregation of the Average Patient Count and the Average Number of Physicians Seen; Data for Manitoba Residents

PHYSICIAN CATEGORY	1971/72	1976/77	1981/82	Percent Change 71-76	76-81	71-81
	APPARENT PATIENT COUNT:					
Excludes RPA & <$20,000 (a)	1,601,876	1,863,317	2,015,479	16.32	8.17	25.82
Radiology	201,533	240,004	196,435	19.09	-18.15	-2.53
Pathology	193,876	361,622	440,002	86.52	21.67	126.95
Anesthesia	52,081	52,861	42,195	1.50	-20.18	-18.98
Excludes RPA & >$20,000 (b)	68,712	70,179	50,320	2.13	-28.30	-26.77
All Physicians	2,118,078	2,587,983	2,744,431	22.19	6.05	29.57
	DISCRETE PATIENT COUNT:					
Excludes RPA & <$20,000 (a)	785,782	866,289	879,145	10.25	1.48	11.88
Radiology	159,977	184,790	176,968	15.51	-4.23	10.62
Pathology	172,348	296,745	345,876	72.18	16.56	100.68
Anesthesia	45,709	45,773	36,128	0.14	-21.07	-20.96
Excludes RPA & >$20,000 (b)	NA	NA	NA			
All Physicians	799,770	878,773	887,929	9.88	1.04	11.02
	AVERAGE NUMBER OF PHYSICIANS SEEN:					
Excludes RPA & <$20,000 (a)	2.04	2.15	2.29	5.51	6.58	12.46
Radiology	1.26	1.30	1.11	3.10	-14.54	-11.89
Pathology	1.12	1.22	1.27	8.33	4.39	13.09
Anesthesia	1.14	1.15	1.17	1.36	1.13	2.50
Excludes RPA & >$20,000 (b)	NA	NA	NA			
All Physicians	2.65	2.94	3.09	11.20	4.95	16.71

(a) This category excludes Radiology, Pathology, Anesthesia and physicians with gross revenues less than $20,000 in 1981/82 fee dollars.

(b) This category excludes Radiology, Pathology, Anesthesia and physicians with gross revenues greater than $20,000 in 1981/82 fee dollars.

Note: In the Discrete Patient Count section the "All Physicians" row is not the sum of the rows above it because the concept of Discrete Patient Count is non-additive.

overall average number of physicians seen because of the large increases in the apparent patient count and discrete patient count of pathologists, 126.95% and 100.68% respectively. The average number of pathologists "seen" by patients has increased at a slightly faster rate than for other physicians. Radiologists seen by patients declined by 11.89%, and anesthetists seen by patients increased by 2.5%. For anesthetists, alternative payment mechanisms with payments received directly through hospital budgets tend to distort the figures.

The phenomenon over the past ten years of an increasing number of physicians seen by patients extends to the vast majority of physicians, except for Radiology specialists.

In Table V-6, the apparent patient count or the total patient load of Manitoba physicians increased by 29.57% from 1971/72 to 1981/82. If radiologists, pathologists, anesthetists, and physicians with gross revenues less than $20,000 in 1981/82 fee dollars are excluded, then the increase falls to 25.82% in the same time. This latter group is excluded in the data provided in Table V-7 which provides for a comparison of certain aggregate data on utilization of medical services.

Table V-7 illustrates that from 1971/72 to 1981/82 the growth rate of the apparent patient count of physicians excluding radiologists, pathologists, anesthetists, and physicians with gross revenues less than $20,000 in 1981/82 fee dollars was substantially greater at 25.8% than the growth rate of the population at 3.8%.

Of greater interest, however, is the almost parallel growth rate in the apparent patient count per capita of 21.2% over the ten years to the increase in the physician-to-population ratio of 24.9%. This suggests that the increased availability of physicians results in an increased number of physicians contacted by each patient. Rather than each physician servicing a smaller share of the population, the extent of patient commonality among physicians increases. This increase in the number of physicians and in the apparent patient count has been associated with a 31.0% increase in the number of contacts per capita, comprised of an 8.1% increase in contacts per apparent patient and a 21.2% increase in the apparent patient count per capita. When fewer

TABLE V-7

Aggregate Data on the Utilization of Medical Services: 1971/72 to 1981/82

		1971/72	1976/77	1981/82	Percent Change: 71-76	76-81	71-81
1)	Manitoba Population:	988,245	1,021,506	1,026,245	3.4	0.5	3.8
2)	Apparent Patient Count (APC)	1,601,876	1,863,317	2,015,479	16.3	8.2	25.8
3)	Discrete Patient Count (DPC)	785,782	866,289	879,145	10.2	1.5	11.9
4)	APC per Capita (2/1)	1.621	1.824	1.964	12.5	7.7	21.2
5)	Average Number of Physicians Seen per Patient (2/3)	2.039	2.151	2.293	5.5	6.6	12.5
6)	Number of Physicians	884	1,072	1,147	21.3	7.0	29.8
7)	Population per Physician Ratio	1,118	953	895	17.3	6.5	24.9
8)	Average Patient load per Physician (2/6)	1812.1	1738.2	1757.2	-4.1	1.1	-3.0
9)	Total Contacts	3,748,396	4,509,230	5,099,149	20.3	13.1	36.0
10)	Contacts per Apparent Patient	2.34	2.42	2.53	3.4	4.5	8.1
11)	Contacts per Discrete Patient	4.77	5.21	5.80	9.1	11.4	21.6
12)	Contacts per Capita	3.79	4.41	4.97	16.4	12.6	31.0

Note: Data include only physicians with gross revenues in excess of $20,000 constant 1981/82 fee dollars.
Data exclude Radiologists, Pathologists and Anesthetists.
Population data are from Statistics Canada.

patients are available, (i.e. the number of physicians increases more quickly than population growth) not only is each serviced more intensively, but patient commonality is increased. It may or may not be coincidence that the increases in the physician-to-population ratio and the apparent patient count are identical. This aggregate data clearly shows that this is happening, but not why.

CONCLUSIONS

In examining the utilization of fee-for-service medical services from 1971/72 to 1981/82 the following is found:

- Not only has the proportion of the elderly in Manitoba increased over the ten years but the costs per discrete patient for the elderly, adjusted for fee increases, have increased dramatically over the ten years.
- Not only has there been an urban/rural shift in the costs per discrete patient in favour of the urban elderly but the aged/young gap has also shifted in favour of the elderly.
- The aging of the population in Manitoba only accounts for a very small proportion of the total increase in per capita costs and other factors must be examined to explain the overall increases.
- The phenomenon over the past ten years of an increasing number of physicians seen by patients extends to the vast majority of physicians, except for Radiology specialists.
- Increased availability of physicians resulted in an increased number of physicians contacted by each patient. Rather than each physician servicing a smaller share of the population, each patient is serviced more intensively and the extent of patient commonality among physicians increases.
- From 1981 to 1983 the growth rate of in the physician-to-population ratio has exceeded the growth rates from 1971/72 to 1981/82. If these growth rates continue and the experience of the past ten years is any indication as to what can be anticipated in the future, this will have a major financial impact on the costs of Medicare.

CHAPTER VI

MEDICAL SERVICES UTILIZATION FROM 1971/72 TO 1981/82: THE PHYSICIANS' SIDE OF THE LEDGER

SUMMARY

Physicians' practices were analysed from 1971/72 to 1981/82 in order to determine what the impacts were of an increasing physician-to-population ratio on medical care utilization. The province was separated into three regions for analytical purposes, Winnipeg, Brandon, and rural Manitoba. Each region had different growth rates in terms of the number of physicians per capita:

- Winnipeg had a 34.4% increase over the ten years of which 23.7% occurred in the first five years and the remainder, 8.7% in the last five years,
- Brandon had a 3.1% increase over the ten years with an increase of 13.1% in the first five years and a decrease of 8.8% in the last five years,
- Rural Manitoba had an increase over ten years of 2.2% with a decrease of 0.3% in the first five years followed by an increase of 2.5%.

(Note: Excludes radiologists, pathologists and anesthetists).

Given these different growth rates Winnipeg can be characterized as a growth area in terms of physician numbers per capita compared to Brandon and Rural Manitoba which were essentially zero growth areas. Brandon was in a more dynamic state in that its total population was growing more quickly than that of Winnipeg so that increases in the number of physicians paralleled population growth which resulted in a little changed ratio of physicians per capita. The rural areas were slow population and physician growth areas and as a result there was little change in the physicians per capita ratio over the ten years.

This particular set of circumstances allows one to examine over time three regions which displayed different characteristics in terms of the growth rate of physicians and the effects on medical care utilization.

WINNIPEG PHYSICIANS:

The growth in the number of physicians per capita in Winnipeg was concentrated in general practice with an increase over ten years of 55.7% compared to 21.6% for specialists. There were also differential growth rates between solo practitioners and group practitioners (whether GPs or specialists) with solo practitioners growing in numbers by 68.2% and group practitioners shrinking by 5.4%. Whereas in 1971/72 there was a 54:46 split between solo practitioners and group practitioners this had changed to 68:32 by 1981/82.

Winnipeg physicians have always been net importers of patients and continued this trend from 1971/72 to 1981/82. The total patient load of all physicians in Winnipeg from 1971/72 to 1981/82 increased by 36.3% but the net import of patients from outside of Winnipeg increased at a faster rate of 54%. Therefore the net import of patients which represented 14.3% of a Winnipeg physician's practice in 1971/72 increased to 16.2% by 1981/82.

Not only did the number of patients from outside Winnipeg increase, the percentage of the population seeing a physician at least once during the year increased from 81.0% of the population from 1971/72 to 88.0% in 1981/82. In terms of discrete patients (i.e., patients who saw at least one physician during the year) this represents an increase of 14.9% relative to an increase in the number of physicians of 42.0%.

Of particular interest during these ten years is the 100% increase in the number of solo general practitioners per capita. This large increase in numbers was associated with a fall in average gross revenues per physician (adjusted for 10 years of fee schedule increases). Fee adjusted gross revenues dropped by 9.9% and would have dropped by more had average patient loads not increased by 6.5% which helped buffer a decrease in revenues per contact of 6.7% and a drop in the contact rate of 9.3%. Average patient loads increased due to increased net imports of patients and a decrease in patient loads of non-solo general practitioners in Winnipeg, as well as an increase in patient commonality and in the percentage of the population seeking medical care.

Patient commonality refers to the degree to which physicians have patients in common with one another, such that the same discrete patient enters the patient load of two or more physicians. The degree to which physicians refer their patients to other physicians, whether on an informal basis or on a formal basis, and the degree of "shopping" for physicians' services by patients, will both have a bearing on patient commonality.

Patient commonality increased the most among solo general practitioners in Winnipeg, and showed almost no change between patients common to solo general practitoners and to physicians in group practices. On the other hand patient commonality with physicians from outside of Winnipeg declined.[1] The patient multiplier of solo general practitioners with other solo general practitioners in Winnipeg increased from 0.21 patients to 0.90 in ten years compared to an increase from .47 to .81 patients with solo specialists in Winnipeg. In other words, in 1971/72 out of 100 patients seeing a solo general practitioner, 21 would show up as part of the load of other Winnipeg solo general practitioners. By 1981/82 these 100 patients would represent an additional 90 patients in other practices, for an increase of 328.6%. Given that the percentage of gross revenues derived from consultations on common patients declined from 3.9% to 2.8% for Winnipeg solo practitioners, it is clear that this increase in patient commonality was not due to a higher rate of (formal) inter-physician referrals for consultations.

It appears that Winnipeg solo general practitioners only lost 10% of their gross revenues, despite the increase in their numbers by 100%, because on average each patient was seen by more solo general practitioners, or sought their advice. The number of general practitioners choosing a group practice arrangement showed almost no increase, a 4% growth rate over ten years. In spite of falling average patient loads of 8.7% and falling revenues per contact of 8.6%, gross revenues increased by 5.5% mainly due to an increase in the contact rate of 26.5%.

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[1] Patient commonality between Winnipeg physicians and with physicians from outside of Winnipeg can decline even though Winnipeg physicians are importing more patients from outside of Winnipeg. This would occur if patients from outside of Winnipeg who were previously seeing a non-Winnipeg physician and a Winnipeg physician opted to only see physicians in Winnipeg.

It appears that the large increase in solo general practitioners may have had a negative impact on the average patient loads of group general practitioners. Had this not been counteracted by an increased contact rate, gross revenues would have fallen rather than increased during this period.

The patient multipliers for Winnipeg group general practitioners remained essentially unchanged during the ten years, which indicates either that patients were not seeking additional physician care from group general practitioners and that informal referrals were not being made at an increased rate by group general practitioners.

The number of specialists per capita in Winnipeg increased at less than half the rate as that of general practitioners, 22% over ten years. The number of solo specialists increased by 49% in numbers per capita but the reverse took place with group specialists with a decline of 11%.

With this increase in their numbers, Winnipeg solo specialists suffered a minor loss in gross revenues of 0.5%. Their average patient loads dropped by 12.9%, but gross revenues were maintained through increased revenues per contact of 6.0% and increased contact rates per patient of 7.7%.

As in the case of Winnipeg solo general practitioners the patient multipliers of patients common to Winnipeg solo specialists of the same specialty and other Winnipeg solo specialists increased during these ten years from .21 to .57, an increase of 171%. Commonality also increased with Winnipeg solo specialists of a different specialty from .91 to 1.65, an increase of 81%. This increased commonality appears to have occurred due to an increase in the consultations rate of common patients of Winnipeg specialists in that consultation revenues as a percentage of gross revenues increased from 26% to 35%.

As indicated above Winnipeg group specialists showed a decrease in numbers per capita of 11% over the ten years. Gross revenues adjusted for fee increases increased by a modest 4.0% in spite of a drop in average patient load of 2%. This was mainly due to an increase in revenues per contact and contacts per patients of 4.2% and 1.9% respectively. Patient multipliers for patients common to specialists within the same group dropped from .69 to .49 over ten years but increased from .78 to 1.53 with patients in common with solo practice physicians. This increase is due to increased formal referrals as witnessed by an increase in consultations as a percentage of revenues from 24.5% to 31.6%.

Solo physicians in Winnipeg showed an increase in their numbers per capita of 68.2% over ten years compared to a decrease of 5.4% for group physicians. As well increases in the commonality of patients as indicated by the patient multipliers shows that patient multipliers increased the most, from 86.1% for solo general practitioners to 52.1% for solo specialists during these ten years. On the other hand group practice physicians had patient multipliers which increased 5.5% for group general practitioners and 22.7% for group specialists. For the latter case there was a concomitant increase in consultations as a percentage of revenues from 15.5% to 30.0% which indicates that increased patient commonality was due to increased formal referrals. In the case of Winnipeg solo specialists there was an increase in consultations as a percentage of revenues from 26.3% to 35.1% which again indicates an increase in formal referrals. However, for the group which showed the largest increase in numbers the degree of patient commonality increased the most which suggests the possibility that over time an informal referral network was developed between physicians, especially solo general practitioners. Alternatively it could be that patients in and of themselves decided to seek the care of more solo general practitioners but not of group general practitioners and to a lesser extent group specialists. If the latter is correct it was fortuitous for Winnipeg solo general practitioners, otherwise gross revenues would have fallen to a greater degree than occurred.

Therefore, an increase in the number of physicians can be accommodated by other physicians through an increase in patient commonality (that is the average number of physicians seen by patients increases) as in the case of Winnipeg solo general practitioners or through an increase in the patient contact rate in light of a fall in average patient loads as in the case of Winnipeg group general practitioners. In any case enough flexibility exists in the system that increasing the number of physicians has shown little impact on incomes. Whether patient commonality is due to spontaneous demand by patients rather than physician generated does not matter. From the point of view of policy, increasing physician numbers reduces income in only one instance, solo practicing general practitioners in Winnipeg, while total costs increased.

BRANDON PHYSICIANS:

During this ten year period the number of physicians per capita in Brandon remained essentially unchanged with a 3.1% increase. The population of Brandon grew at almost three times the Winnipeg rate and the number of physicians kept pace resulting in this slight increase in the ratio of physicians per capita.

Unlike Winnipeg, which has a preponderance of solo physicians, Brandon has a preponderance of group practice physicians. From a ratio of 20:80 solos to group physicians in 1971/72, the ratio changed to 28:72 in 1981/82 due to an increase of 115% in the number of solo specialists per capita and a decline in numbers for solo or group general practitioners and for group specialists.

Brandon physicians have always been net importers of patients. In 1971/72, 27.2% of a Brandon physician's practice was from net imports of patients compared to a slight increase to 28.5% in 1981/82.

During these ten years the number of general practitioners per capita in Brandon decreased by 5.4% with the largest decrease occurring among solo practitioners at 14% versus a decline of 2.6% for those in groups. With a decline in numbers relative to population one could expect to see an increase in patient loads. However, for Brandon solo general practitioners the increase in patient load of 53.7% cannot be accounted for by this small drop in numbers relative to population or to the increase due to net imports of patients. Patient commonalities reveal that patient multipliers of Brandon solo general practioners with other physicians in Brandon increased from 0.60 to 1.61, an increase of 168% over ten years. This increased patient commonality was not due to increased consultations because consultations as a percentage of revenues from common patients declined from 18.7% to 14.7%. Whether this increase is due to an informal referral network or increased patient demand, gross revenues per solo general practitioner increased 49.1%. This was due to an increased patient load of 53.7% dampened by a drop in revenue per contact of 17.4% which was buffered by an increase in the patient contact rate of 17.4%. Unlike Winnipeg solo general practitioners, whose patient commonality increased the most with other solo practitioners, those in Brandon saw an increase with both solo and group practitioners in Brandon.

The number of group general practitioners in Brandon declined relative to population by 2.6% over these ten years. Average gross revenues adjusted for fee schedule increases increased by 29.3%, mainly due to an increase in average patient load of 30.1%. Revenues per patient remained essentially unchanged, due to a drop in the revenue per contact which was offset by an equivalent increase in the contact rate per patient.

Patient commonality with other Brandon physicians increased from a patient multiplier of 1.61 in 1971/72 to 1.92 in 1981/82, an increase of 19.3%. As in the case of Winnipeg group general practitioners, increased patient commonality did not occur within their own group practices and actually declined with other group practices in Brandon. Increased patient commonality took place with other solo practitioners in Brandon. In the case of patient commonality with solo general practitioners a multiplier of .04 in 1971/72 increased to .13 in 1981/82. Increased patient commonality occurred with solo specialists from a patient multiplier of .06 to .27 in 1981/82.

The number of solo specialists in Brandon increased by 115% over the ten years. Gross revenues adjusted for fee schedule increases increased by 37.4% mainly due to an increase in patient load of 32.5%. Average revenue per patient increased slightly in spite of a drop in the patient contact rate because the revenue per contact increase was greater than the decline in the contact rate.

Patient multipliers of patients common to Brandon solo specialists and other physicians in Brandon increased from 0.86 to 1.55 in ten years, an increase of 80.2%. These increases in patient commonality were concentrated among other specialists in Brandon whether in solo or group specialists. In the case of patient commonality among Brandon solo specialists and other Brandon solo specialists of the same specialty there was no patient commonality in 1971/72 and a small multiplier of .07 in 1981/82. This change in patient commonality was due to an increase in consultations amongst these physicians as seen in the increase in consultations revenues on common patients as a percentage of gross revenues from 18.3% to 43.7%.

The number of Brandon group specialists per capita decreased by 10% over these ten years. Gross revenues per specialist increased by 48.3% due to an increase in revenues per patient of 17.7%, an increase in the contact rate per patient of 15.3% and an increase in average patient load of 9.3%.

Patient commonality of patients common to Brandon group specialists and other Brandon physicians increased from 1.30 to 1.81 in 1981/82, an increase of 39.2%. The largest increase in patient commonality occurred among physicians in the same group practice which increased from .83 in 1971/72 to 1.18 by 1981/82, an increase of 42.2%. A portion of this increased commonality was due to an increased number of consultations as witnessed by an increase in the consultations revenues as a percentage of gross revenues from common patients from 20.0% to 25.4% over ten years.

Of interest in these data on the practices of Brandon physicians is the increase in gross revenues adjusted for fee schedule increases which ranged from 29.3% to 49.1%, mostly due to an increase in average patient loads. Since the percentage of net imports of patients increased only slightly, this larger pool of patients was being drawn from the existing population partly due to increased patient commonality. As well over this time period the percentage of the population in Brandon seeing a physician at least once during the year increased from 85.7% of the population in 1971/72 to 95.7% by 1981/82.

Unlike the situation in Winnipeg, where there was a large increase in the number of physicians relative to population, patient commonality contributed to the maintenance of gross revenues over ten years at essentially the same levels in constant 1981/82 dollars. The situation in Brandon was dynamically stable. The number of physicians relative to population was stable but in this situation increased patient commonality increased average patient loads and resulted in substantially higher revenues for Brandon physicians.

RURAL PHYSICIANS:

The situation in rural Manitoba can be described as one of stability in terms of the number of physicians per capita. The population grew by 0.5% over ten years and the number of physicians grew by 3.6% which increased the number of physicians per capita by 3.1%. This is in contrast to the situation in Brandon where the population and the number of physicians were growing at essentially the same rate. In rural Manitoba the vast majority of physicians, 93% are general practitioners. This is in contrast with Winnipeg and Brandon where approximately 40% of physicians are in general practice.

Over the ten years the rural areas were net exporters of patients to Winnipeg and Brandon. In 1971/72 net exports were 35% of rural patients compared to 41% in 1981/82.

In spite of this increase in the net export of patients out of rural areas and the next to zero population growth, general practitioners in rural Manitoba managed to increase their patient loads from 9.6% to 12.4%. Some of this growth in average patient load can be accounted for by the increase in the percentage of rural residents seeing a physician at least once during the year which increased from 80.5% of the population in 1971/72 to 83.7% by 1981/82. This represents an increase of 4.5% in the discrete patient count but does not account for the increase in average patient loads.

During these ten years the number of solo general practitoners per capita in Rural Manitoba increased by 7.6%. Gross revenues increased by 15.9% mostly due to an increase in the patient contact rate of 10.7%, an increase in the average patient load of 9.6% but dampened by a fall in the revenue per contact of 4.5%. In looking at the commonality of patients of solo general practitioners in rural Manitoba with other rural physicians, a patient multiplier of 0.62 in 1971/72 is found which increased to 1.04 by 1981/82, an increase of 67.8%. Most of this increase took place among solo general practitioners in that patient multipliers increased from .42 to .74, an increase of 76.2% over ten years. Part of this increased patient commonality was due to an increase in the consultations rate as reflected in the consultations as a percentage of gross revenues from common patients which increased from 1.6% to 6.2%.

In examining the practices of rural group general practitioners one finds that their numbers per capita decreased by 5.5% and that their fee adjusted gross revenues increased by 10.3%. This increase was mainly due to an increase in their average patient loads of 12.4%. An increase in the patient contact rate of 11.3% was cancelled by a drop in the revenue per contact of 11.8% which resulted in a slight drop of 1.8% in the revenues per patient.

The patient commonality of rural group general practitioners with other rural physicians increased from 1.24 in 1971/72 to 1.43 in 1981/82, an increase of 15.3%. Most of this increase took place between solo general practitioners and group practitioners and with physicians from Brandon and Winnipeg. There was essentially no change in the patient multipliers of rural group general practitioners with other physicians within their group practice.

In spite of the increase in the net exports of patients to physicians in Winnipeg and Brandon, rural physicians saw an increase in average patient loads due to an increase in patient commonality and also to an increasing percentage of the population seeking medical care.

To summarize, it appears that in spite of a 34.4% increase in the number of physicians per capita in Winnipeg over ten years, physicians' fee adjusted gross revenues were maintained during this time period, because average patient loads did not fall in spite of a shrinkage in the potential patient pool relative to the number of new physicians. The experience of physicians as their numbers increased varied by specialty and type of practice. Winnipeg solo general practitioners and Winnipeg solo specialists showed an increase in patient commonality which helped maintain average patient loads. Group practice physicians displayed no major changes in patient commonalities in the case of group general practitioners but the patient contact rate rose by 26.5%. Winnipeg group specialists showed an increase in patient commonality but no major changes in the patient contact rate.

To a certain extent the increase in patient commonality may be attributable to increased demand for medical services in a more affluent society as well as patients seeking the opinion of more than one physician. However it is interesting that increased commonality occurred among the physicians whose numbers were increasing most rapidly and that little occurred amongst group practices which had declines in their average patient loads. This could have occurred if group practices were no longer accepting new patients in spite of a decline in their average patient loads. However the pattern suggests that at least a portion of this increased patient commonality is due to informal referrals, namely those occurring without a consultation. The increase is also most pronounced, as shown in Chapter V, among the elderly population. In the case of Brandon, all physicians showed significant increases in average patient loads which translated into higher average gross revenues. Patient commonality increased in all instances; without this increased patient commonality Brandon physicians would not have seen increases in fee adjusted gross revenues of from 29.3% to 49.1%.

In the rural areas, rural general practitioners showed increased fee adjusted gross revenues of 10.3% to 15.9%. This was mainly due to increased patient loads from increased patient commonality.

It appears that in spite of increases in the number of physicians relative to the population, the average patient load of physicians changed very little. In some regions and physician classes the average load actually increased while the pool of potential patients was falling.

BACKGROUND

The population of Manitoba has shown little growth from 1971/72 to 1981/82. From Tables VI-1 and VI-2 it can be seen that in this ten year span, the population has increased by 3.9% or 0.38% per annum. This increase, however, has occurred entirely in the first half of the decade. From 1976 to 1981, the population has remained virtually constant. The urban versus rural population mix in these ten years has changed in favour of the urban areas of Winnipeg and Brandon due to growth rates of 5.7% and 16.3% respectively. This compares to a ten year growth rate in the rural areas (defined as the population not living in Winnipeg or Brandon) of 0.6%.

The steady increase in the number of fee-for-service physicians in Manitoba from 1971/72 to 1981/82 resulted in a 25.0% increase in the physician-to-population ratio (excluding radiologists, pathologists and anesthetists). Most of the increase, 17.3%, occurred in the 1971/72 to 1976/77 period with a smaller increase of 6.5% from 1976/77 to 1981/82. Furthermore as outlined in Chapter V the average annual increase from 1981 to 1983 has accelerated to 3.92% which is greater than the 3.25% average annual increase from 1971/72 to 1976/77.

In this ten year time span, a significant number of additional general practitioners (GPs) elected to practice in Winnipeg relative to the rural areas. This affinity for an urban practice by GPs has resulted in a 55.7% increase in the GP-to-population ratio in Winnipeg relative to a decrease of 5.4% in Brandon and a small increase of 2.0% in the rural areas.

From 1971/72 to 1981/82 the average payment of all GPs in the province, with gross payments in excess of $20,000 constant 1981/82 fee dollars, increased by 98.1%. This is an increase in average payments which is greater than the increase in the fee schedule for GPs of 92.5%[*]. This increase of 98.1% in the average payment to GPs is not distributed uniformly across all the GPs in the province. Winnipeg had

[*] UNLESS SPECIFICALLY MENTIONED, DATA IN THIS CHAPTER EXCLUDES RADIOLOGISTS, PATHOLOGISTS AND ANESTHETISTS, AS WELL AS ALL PHYSICIANS WITH GROSS PAYMENTS LESS THAN $20,000 IN CONSTANT 1981/82 FEE DOLLARS.

Table VI-1

Information Pertaining to Physicians Receiving Fee-for-Service Payments in Manitoba for 1971/72, 1976/77 and 1981/82

	General Practice					
	Winnipeg	Brandon	Rural	All	Specialists	
1971/72						
Population:	540,265	31,150	416,830	988,245	988,245	988,245
Physicians:	220	20	235	475	409	884
Phys/Pop Ratio:	1:2,456	1:1,558	1:1,774	1:2,081	1:2,416	1:1,118
Average Payment:	$42,820	$39,996	$44,317	$43,442	$55,133	$48,851
1976/77						
Population:	566,813	34,901	419,792	1,021,506	1,021,506	1,021,506
Physicians	325	26	236	587	485	1,072
Phys/Pop Ratio:	1:1,744	1:1,342	1:1,779	1:1,740	1:2,106	1:953
Average Payment:	$50,509	$52,897	$57,145	53,283	$63,632	$57,965
1981/82						
Population:	570,845	36,240	419,160	1,026,245	1,026,245	1,026,245
Physicians:	362	22	241	625	522	1,147
Phys/Pop Ratio:	1:1,577	1:1,647	1:1,739	1:1,642	1:1,966	1:895
Average Payment:	$78,083	$103,011	$96,477	$86,054	$105,931	$95,100

Note: Data include only physicians with gross revenues in excess of $20,000 constant 1981/82 fee dollars.
Data exclude Radiologists, Pathologists and Anesthetists.
Population data are Statistics Canada data.

Table VI-2

Interyear Comparisons of Information Pertaining to Physicians Receiving Fee-for-Service Payments in Manitoba for 1971/72, 1976/77 and 1981/82

	Winnipeg	Brandon	Rural	All
A) Percent change in population:				
1971-76	4.91	12.04	0.71	3.37
1976-81	0.71	3.84	-0.15	0.46
1971-81	5.66	16.34	0.56	3.85

	General Practice					
	Winnipeg	Brandon	Rural	All	Specialists	Total
B) Percent change in fee-for-service physicians:						
1971-76	47.73	30.00	0.43	23.58	18.58	21.27
1976-81	11.38	-15.38	2.12	6.47	7.63	7.00
1971-81	64.55	10.00	2.55	31.58	27.63	29.75
C) Percent change in physician-to-population ratio:						
1971-76	40.81	16.03	-0.28	19.56	14.72	17.32
1976-81	10.60	-18.51	2.27	5.98	7.13	6.50
1971-81	55.73	-5.45	1.98	26.71	22.90	24.95
D) Percent change in average fee-for-service payments:						
1971-76	17.96	32.26	28.95	22.65	15.42	18.56
1976-81	54.59	94.74	68.83	61.50	66.47	64.06
1971-81	82.35	157.55	117.70	98.09	92.14	94.67
E) Percent change in fee schedule:						
1971-76	-	-	-	24.8	23.7	24.5
1976-81	-	-	-	55.3	55.0	54.3
1971-81	-	-	-	9[illegible].5	91.7	92.1

Note: Data include only physicians with gross revenues in excess of $20,000 constant 1981/82 fee dollars.
Data exclude Radiologists, Pathologists and Anesthetists.
Population data are Statistics Canada data.
NA: Not Applicable.

the largest increase in the GP-to-population ratio in these ten years combined with the smallest increase in the average payment to GPs, 55.7% and 82.4% respectively. Brandon, on the other hand, had a drop in the GP-to-population ratio of 5.5% coupled with a substantial increase in the average payment per GP of 157.6%. In rural Manitoba there was a slight increase in the GP-to-population ratio of 2.0% combined with an increase in the average payment per GP of 117.7%.

The major increase in the GP-to-population ratio occurred in the 1971/72 to 1976/77 period. Winnipeg had the largest increase in GPs, 47.7%, coupled with a modest increase of 4.9% in population. Brandon had an increase of 30.0% in the number of GPs and a relatively large increase in population of 12.0% which slowed the growth of its GP-to-population ratio. Rural Manitoba in this time period had virtually no growth in its population or in the number of its GPs.

The lower than average payment increase for Winnipeg GPs took place during the first five years of this ten year period which coincided with the large increase in the number of GPs. During the last five years, average payments of Winnipeg GPs kept pace with the increase in the fee schedule. GPs in Brandon increased their average payments during both halves of this ten year period, but made significant gains in the last five year period when the GP-to-population ratio decreased by 18.5% and average payments increased by 94.7% relative to a fee schedule increase of 55.3%. Rural GPs, whose numbers have remained relatively stable combined with a stationary population, increased their average payments in both halves of the ten years but not to the same extent as the GPs in Brandon.

To put these shifts in average payments into perspective, GPs in Brandon went from last place in 1971/72 to first place in 1981/82 compared to GPs in Winnipeg and rural Manitoba. GPs in Brandon went from being 6.6% below Winnipeg GPs in terms of average payments in 1971/72 to 31.9% above in 1981/82. Rural GPs also surpassed Winnipeg GPs in terms of average payments. In 1971/72 average payments to rural GPs were 3.5% higher than those of Winnipeg GPs but by 1981/82, they were 23.6% higher.

So far the discussion has focused on GPs with no mention of specialists. The growth in the number of specialists in Manitoba has been slightly lower over the ten years when compared to all GPs in Manitoba. In 1981/82, 91% of specialists practiced in Winnipeg. The increase in total numbers by 27.6% is less than half of the increase of 64.6% in the number of GPs in Winnipeg during the ten years. The average payments of specialists increased at almost the same pace as increases in overall fees. The specialist-to-population ratio during these ten years increased by 22.9% compared to the 55.7% increase in the Winnipeg GP-to-population ratio.

The GP-to-population ratio remained almost constant in rural Manitoba and decreased in Brandon while average payments increased by factors greater than the increase in fees during the same time period. The specialist-to-population ratio increased at half the rate of the population per Winnipeg GP and average payments closely tracked the increase in fees over time. The GP-to-population ratio in Winnipeg increased substantially during this time period but average payments almost kept up to the increase in overall fees. An increasing physician-to-population ratio as in the case of Winnipeg GPs had a minor dampening impact on average payments. In spite of a GP-to-population ratio increase of 55.7% in Winnipeg, average payments by 1981/82 were only 5.3% lower than the overall increase in fees.

Perusal of Table VI-3 provides a more detailed breakdown of the number of physicians by the location of physicians' practices, the type of practice, solo or group practice, and by general practice and specialists. The data are consistent with physician-to-population ratios provided in Tables VI-1 but are expressed instead as physician-per-10,000 population ratios. From Table VI-3 it can be seen that the physician per population ratio has increased by 55.7% for GPs in Winnipeg and that almost all of this increase is attributable to a 99.6% increase in the solo GP per population ratio. The physician per population ratio in Brandon and in rural Manitoba has increased by 3.1% and 2.2% respectively in the ten years.

These particular events in Manitoba lend themselves to analysis in the sense that they form the basis of a natural experiment for the study of physician behaviour in light of a stable population and an increasing number of physicians. Winnipeg has seen an increased concentration in the supply of physicians, especially GPs, whereas no such increased concentration has occurred in Brandon or in rural Manitoba.

VI-2 PHYSICIANS' PRACTICES FROM 1971/72 TO 1981/82

In order to understand the dynamics of physicians' practices, a preliminary analysis of certain indicators is required. In this section the following indicators will be used in the analysis:

- AVERAGE REVENUE PER PHYSICIAN: This is defined as the average payment received from the Manitoba Health Services Commission by fee-for-service physicians with gross payments in excess of $20,000 in constant 1981/82 fee dollars and excludes Radiologists, Pathologists and Anesthetists.
- AVERAGE REVENUE PER CONTACT: This is the average revenue generated by physicians each time there is a contact between the physician and a patient.
- CONTACTS PER PATIENT: This is the average number of contacts each patient has with a physician.
- PATIENTS PER PHYSICIAN: This is the average number of patients seen by each physician.

In this chapter the regional data refer to the location of practice of physicians. In the previous chapter the data by region was based on the residence of the patients. Therefore, comparisons of the data between these two chapters have to be made with this proviso.

VI-2-1 WINNIPEG PHYSICIANS

During the ten year period from 1971/72 to 1981/82 only Winnipeg has shown a significant increase in the physician per population ratio. This growth rate of 34.4% is 10 to 15 times greater than the growth rate in

TABLE VI-3

Physicians per 10,000 Population
By Region, Specialty and Type of Practice

	1971/72	1976/77	1981/82	% Change: 71-76	76-81	71-81
WINNIPEG:						
General Practice						
Solo	2.20	3.60	4.40	63.4	22.2	99.6
Group	1.87	2.13	1.94	14.2	-8.9	4.0
All	4.07	5.73	6.34	40.8	10.6	55.7
Specialists						
Solo	3.68	4.66	5.50	26.4	18.1	49.3
Group	3.13	3.07	2.79	-1.9	-9.3	-11.0
All	6.81	7.73	8.29	13.4	7.2	21.6
All Physicians						
Solo	5.89	8.26	9.90	40.3	19.9	68.2
Group	5.00	5.20	4.73	4.1	-9.1	-5.4
All	10.88	13.46	14.63	23.7	8.7	34.4
BRANDON:						
General Practice						
Solo	1.61	2.01	1.38	25.0	-31.2	-14.0
Group	4.82	5.44	4.69	13.1	-13.8	-2.6
All	6.42	7.45	6.07	16.0	-18.5	-5.4
Specialists						
Solo	1.28	2.29	2.76	78.5	20.4	114.9
Group	6.74	6.59	6.07	-2.2	-7.9	-10.0
All	8.03	8.88	8.83	10.7	-0.6	10.0
All Physicians						
Solo	2.89	4.30	4.14	48.8	-3.7	43.3
Group	11.56	12.03	10.76	4.1	-10.6	-6.9
All	14.45	16.33	14.90	13.1	-8.8	3.1
RURAL:						
General Practice						
Solo	3.21	3.33	3.46	3.7	3.7	7.6
Group	2.42	2.29	2.29	-5.6	0.2	-5.5
All	5.64	5.62	5.75	-0.3	2.3	2.0
Specialists						
Solo	0.07	0.14	0.14	98.6	0.2	98.9
Group	0.31	0.24	0.26	-23.6	10.2	-15.9
All	0.38	0.38	0.41	-0.7	6.4	5.7
All Physicians						
Solo	3.29	3.48	3.60	5.8	3.6	9.6
Group	2.73	2.53	2.55	-7.7	1.1	-6.7
All	6.02	6.00	6.16	-0.3	2.5	2.2

Note: Data include only physicians with gross revenues in excess of $20,000 constant 1981/82 fee dollars, and exclude Radiologists, Pathologists and Anesthetists.
Population data are Statistics Canada data.

Brandon or rural Manitoba. How did physicians fare in Winnipeg in coping with this increase in their numbers relative to a stable population base? From Table VI-4 it can be seen that even with a growth rate in the physician per population ratio of 34.4%, the average payments to physicians in Winnipeg, adjusted for fee schedule increases and denominated in 1981/82 dollars, stood up extremely well over the ten years. These adjusted data are a comparison which discount for fee increases, therefore, all differences are attributable to volume changes. The largest decline in average payments, 11.3%, took place from 1971/72 to 1976/77 for solo GPs in Winnipeg. During this same time period their numbers per capita increased by 63.4%. Gains in average patient loads of 9.2% were insufficient to offset the decreases in average revenue per contact and average number of contacts per patient of 6.1% and 13.6% respectively. In the last five year time period, average payments rose by 1.6% due to a 5.0% increase in the contact rate per patient which was not entirely offset by a decline in patient load of 2.5% and a slight decline in the revenues per contact of 0.7%. Over the decade the per capita number of solo GPs in Winnipeg increased by 100.0%, whereas gross revenues dropped by 10.0%. Increased patient loads of 6.5% were insufficient to counter a decreasing contact rate and revenues per contact of 9.3% and 6.7% respectively, and thus solo GPs'gross revenues fell.

Group GPs per capita in Winnipeg showed a modest increase of 4.0% during these ten years and an increase in average payments of 5.5%. Unlike solo GPs the group GPs were losing patients, down 8.7% over ten years. Loss in revenue per contact of 8.6% was larger than the loss suffered by solo GPs. However, this was overshadowed by a substantial increase in the contact rate per patient of 26.5% which resulted in an increase in gross revenues of 5.5%. The gap between average payments to solo versus group GPs had widened from $525 in 1971/72 to $13,164 or 18% by 1981/82, in favor of group GPs.

The average revenue differentials between solo and group specialists during this time also widened but not to the same degree as between solo and group GPs. Solo specialists saw a slight drop in payments of 0.5%

Table VI-4

Winnipeg Physicians' Average Gross Revenues for those with Gross Revenues in Excess of $20,000 in Constant 1981/82 Fee Dollars. (All data are in Constant 1981/82 Fee Dollars)

	Physicians Per 10,000 Population	Total Revenue per Physician	=	Total Revenue per Contact	x	Contacts per Patient	x	Patients per Physician
SOLO-GPs								
1971/72	2.20	$82,166		$16.73		3.02		1,626
1976/77	3.60	$72,846		$15.72		2.61		1,776
1981/82	4.40	$74,047		$15.60		2.74		1,732
% 71-76	63.4	-11.3%		-6.1%		-13.6%		9.2%
CHA 76-81	22.2	1.6		-0.7		5.0		-2.5
NGE 71-81	99.6	-9.9		-6.7		-9.3		6.5
GROUP-GPs								
1971/72	1.87	$82,691		$16.77		2.23		2,211
1976/77	2.13	$86,527		$15.91		2.43		2,238
1981/82	1.94	$87,211		$15.33		2.82		2,017
% 71-76	14.2	4.6%		-5.2%		9.0%		1.2%
CHA 76-81	-8.9	0.8		-3.6		16.0		-9.9
NGE 71-81	4.0	5.5		-8.6		26.5		-8.7
SOLO-SPEC								
1971/72	3.68	$96,387		$30.34		2.08		1,527
1976/77	4.66	$91,341		$30.91		2.25		1,313
1981/82	5.50	$95,899		$32.16		2.24		1,331
% 71-76	26.4	-5.2%		1.9%		8.2%		-14.0%
CHA 76-81	18.1	5.0		4.0		-0.4		1.4
NGE 71-81	49.3	-0.5		6.0		7.7		-12.9
GRP-SPEC								
1971/72	3.13	$118,663		$27.73		2.07		2,067
1976/77	3.07	$108,830		$29.38		2.13		1,739
1981/82	2.79	$123,505		$28.89		2.11		2,026
% 71-76	-1.9	-8.3%		5.9%		2.9%		-15.9%
CHA 76-81	-9.3	13.5		-1.7		-0.9		16.5
NGE 71-81	-11.0	4.1		4.2		1.9		-2.0

Source: Manitoba Health Services Commission.

mainly due to a drop in patient load of 12.9% not being fully compensated by increases in the revenue per contact of 6.0% and in the contact rate per patient of 7.7%. During this time solo specialists per capita increased by close to 50.0% versus a decline for group specialists of 11.0%. From 1971/72 to 1976/77 group specialists suffered a decline in patient load of 15.9% which outweighed an increase in revenue per contact and in the contact rate. However, from 1976/77 to 1981/82 group specialists regained almost all of the patient load lost in the first five years and saw their revenue per contact and contact rate per patient fall only slightly. The result is that in the latter five years their average payments grew by 13.5% for a net gain of 4.1% over the ten years.

Clearly, physicians in group practices in Winnipeg fare better than their colleagues in solo practice in terms of average payments. For GPs the differential appears to be due mainly in the patient loads of group GPs that are 16% greater. Whereas in the case of specialists, the solo specialists have average revenues per contact that are 11% greater but patient loads that are 34.0% lower.

The period from 1971/72 to 1976/77, which was a period of rapid growth in the per capita number of physicians in Winnipeg, saw only group GPs able to increase their payment levels above the increase in fees. In the medium term this increase in the number of physicians seems to have dampened the ability of Winnipeg physicians, other than group GPs, to maintain payment levels equal to the increase in fees.

However, from 1976/77 to 1981/82 a lower growth rate in physician numbers coincided with fee adjusted growth in gross revenues from 0.8% to 13.5%. Over the ten years, solo GPs and solo specialists per capita increased by 100.0% and 50.0% respectively and their gross revenues fell 10.0% and 0.5% respectively. On the other hand, group GPs per capita increased by a modest 4.0% and group specialists per capita fell by 11.0% while their gross revenues increased by 5.5% and 4.1% respectively. It appears as if increases or decreases in the per capita number of physicians, be they large or small, have little impact on physicians' gross revenues.

VI-2-2 BRANDON PHYSICIANS

Since 1971/72 Brandon has had a higher physician-to-population ratio than Winnipeg. By 1976/77 the ratio had increased by 13.1%, but it then fell by 8.8% by 1981/82. The net impact over the ten years was a small increase in the ratio of 3.1%. In the ten years Winnipeg saw a shift towards more GPs, whereas Brandon shifted towards more specialists. In 1981/82, 43.3% of the physicians in Winnipeg were GPs, up from 37.4% in 1971/72. In comparison, Brandon went from 44.4% GPs in 1971/72 to 40.7% by 1981/82. Over this ten year period, physicians in Brandon fared rather well in comparison to their colleagues in Winnipeg. It can be seen from Table VI-5 that average payments, after adjusting for fee schedule increases, increased 29.3% to 49.1% during these ten years. The largest increase was registered by solo GPs, a gain of 49.1%. This increase came exclusively from an increase in patient loads of 53.7%. The increase in average revenue per contact was cancelled by a similar decrease in the contact rate per patient. Group specialists saw almost the same increase in average payments, 48.3% over the ten years. The source of this increase was more widespread in that they increased their revenue per contact by 17.7%, the contact rate increased by 15.3% and their patient loads increased by 9.3%. The increase in average payments for solo specialists was 37.4%, comprised of an increase in revenue per contact of 20.5%, a decrease in the contact rate of 13.9% and an increase in patient load of 32.5%.

The lowest increase took place among group GPs, 29.3%. Patient load increased by 30.1%, the contact rate increased by 20.9% and the revenue per contact decreased by 17.8%.

The only clear pattern in this data is that all physicians in Brandon increased patient loads over the ten years. GPs, whether in solo or group practice, saw a decrease in revenue per contact which was countervailed by a similar increase in the contact rate. Specialists, on the other hand increased their revenues per contact as well as their patient loads. Group specialists increased their contact rate as well, whereas solo specialists decreased their contact rate.

Table VI-5

Brandon Physicians' Average Gross Revenues for those with Gross Revenues in Excess of $20,000 in Constant 81/82 Fee Dollars.
(All data are in Constant 81/82 Fee Dollars.)

	Physicians Per 10,000 Population	Total Revenue per Physician	Total Revenue per Contact	x Contacts per Patient	Patients per Physician
SOLO-GP's					
1971/72	1.61	$85,774	$18.77	3.21	1,424
1976/77	2.01	$117,493	$18.70	2.76	2,276
1981/82	1.38	$127,860	$15.50	3.77	2,188
% 71-76	25.0	37.0%	-0.4%	-14.0%	59.9%
CHA 76-81	-31.2	8.8	-17.1	36.6	-3.9
NGE 71-81	-14.0	49.1	-17.4	17.4	53.7
GROUP-GP's					
1971/72	4.82	$74,039	$19.65	1.87	2,015
1976/77	5.44	$68,412	$18.79	1.95	1,867
1981/82	4.69	$95,703	$16.16	2.26	2,620
% 71-76	13.1	-7.6%	-4.4%	4.3%	-7.3%
CHA 76-81	-13.8	39.9	-14.0	15.9	40.4
NGE 71-81	-2.6	29.3	-17.8	20.9	30.1
SOLO-SPEC					
1971/72	1.28	$81,517	$23,70	2.23	1,542
1976/77	2.29	$62,122	$18.57	3.05	1,097
1981/82	2.76	$112,001	$28.55	1.92	2,043
% 71-76	78.5	-23.8%	-21.7%	36.8%	-28.9%
CHA 76-81	20.4	80.3	53.8	-37.0	86.2
NGE 71-81	114.9	37.4	20.5	-13.9	32.5
GRP-SPEC					
1971/72	6.74	$78,832	$29.81	1.90	1,392
1976/77	6.59	$93,873	$32.32	1.87	1,553
1981/82	6.07	$116,892	$35.08	2.19	1,521
% 71-76	-2.2	19.1%	8.4%	-1.6%	11.6%
CHA 76-81	-7.9	24.5	8.6	17.1	-2.1
NGE 71-81	-10.0	48.3	17.7	15.3	9.3

Source: Manitoba Health Services Commission

An examination of the differences in average payments among these various groups of physicians in 1981/82 shows that the contact rate per patient is the highest for solo GPs who have a contact rate 66.8% to 96.3% higher than their colleagues. On the other hand, they have patient loads that are 16.5% lower than for group GPs but with a similar revenues per contact.

One can characterize solo GPs in Brandon as having fewer patients than their group colleagues but servicing them more intensively. Among specialists, it is the solo practitioners who have higher patient loads but a lower servicing rate than their group colleagues. The group specialists attain a similar payment level by having a higher revenue per contact.

Unlike their colleagues in Winnipeg, some of whom suffered decreases in average payments, physicians in Brandon managed to make substantial gains in average payments from 1971/72 to 1981/82, in spite of already having a higher concentration of physicians than in Winnipeg.

VI-2-3 RURAL MANITOBA PHYSICIANS

Rural Manitoba has had very little change in its physician-to-population ratio from 1971/72 to 1981/82. Approximately 93.0% of physicians in rural areas were GPs in 1981/82, unchanged from 1971/72.

From Table VI-6 it can be seen that except for solo specialists, average payments to rural physicians increased anywhere from 0.5% to 15.9% during these 10 years. Solo GPs saw a decrease in their average revenue per contact of 4.5%, but this was compensated by an increase in the contact rate of 10.7% and in patient load of 9.6%. Overall, average payments to rural solo GPs increased by 15.9%. GPs managed to increase average payments by 10.3% by increasing their patient loads by 12.4%.

As in Brandon, solo GPs had smaller patient loads than their group colleagues but compensated for this by servicing their patients more intensively. Solo GPs in Winnipeg, however, service their patients slightly less than their group colleagues.

Table VI-6

Rural Physicians' Average Gross Revenues for those with Gross Revenues in Excess of $20,000 in Constant 81/82 Fee Dollars.
(All data are in Constant 81/82 Fee Dollars.)

	Physicians Per 10,000 Population	Total Revenue per Physician	=	Total Revenue per Contact	x	Contacts per Patient	x	Patients per Physician
SOLO-GP's								
1971/72	3.21	$81,072		$17.45		2.80		1,659
1976/77	3.33	$84,250		$16.42		2.95		1,739
1981/82	3.46	$93,978		$16.66		3.10		1,819
% 71-76	3.7	3.9%		-5.9%		5.4%		4.8%
CHA 76-81	3.7	11.5		1.5		5.1		4.6
NGE 71-81	7.6	15.9		-4.5		10.7		9.6
GROUP-GP's								
1971/72	2.42	$90,882		$20.22		2.22		2,025
1976/77	2.29	$93,913		$18.29		2.37		2,166
1981/82	2.29	$100,253		$17.84		2.47		2,275
% 71-76	-5.6	3.3%		-9.5%		6.8%		7.0%
CHA 76-81	0.2	6.8		-2.5		4.2		5.0
NGE 71-81	-5.5	10.3		-11.8		11.3		12.4
*SOLO-SPEC								
1971/72	0.07	$144,814		$24.68		2.78		2,111
1976/77	0.14	$105,014		$21.15		2.27		2,188
1981/82	0.14	$86,122		$35.18		2.91		841
% 71-76	98.6	-27.5%		-14.3%		-18.3%		3.7%
CHA 76-81	0.2	-18.0		66.4		28.2		-61.5
NGE 71-81	98.9	-40.5		42.5		4.7		-60.1
GRP-SPEC								
1971/72	0.31	$121,002		$26.13		2.33		1,987
1976/77	0.24	$126,147		$26.96		2.29		2,043
1981/82	0.26	$121,606		$29.52		2.26		1,823
% 71-76	-23.6	4.3%		3.2%		-1.7%		2.87%
CHA 76-81	10.2	-3.6		9.5		-1.3		-10.8
NGE 71-81	-15.9	0.5		13.0		-3.0		-8.3

Source: Manitoba Health Services Commission

*Number of physicians too small to provide stable statistics.

Table VI-7

Manitoba Physicians' Average Gross Revenues for those with Gross Revenues in Excess of $20,000 in Constant 81/82 Fee Dollars.
(All data are in Constant 81/82 Fee Dollars.)

	Physicians Per 10,000 Population	Total Revenue per Physician =	Total Revenue per Contact x	Contacts per Patient x	Patients per Physician
SOLO-GP's					
1971/72	2.61	$81,667	$17.18	2.90	1,640
1976/77	3.44	$78,285	$16.13	2.74	1,771
1981/82	3.91	$81,925	$16.02	2.89	1,769
% 71-76	31.6	-4.1%	-6.1%	-5.5%	8.0%
CHA 76-81	13.7	4.6	-0.7	5.5	-0.1
NGE 71-81	49.7	0.3	-6.7	-0.3	7.9
GROUP-GP's					
1971-72	2.20	$85,905	$18.50	2.20	2,111
1976/77	2.31	$88,073	$17.05	2.37	2,179
1981/82	2.18	$93,445	$16.41	2.62	2,174
% 71-76	5.2	2.5%	-7.8%	7.7%	3.2%
CHA 76-81	-5.5	6.1	-3.8	10.5	-0.2
NGE 71-81	0.6	8.8	-11.3	19.1	3.0
SOLO-SPEC					
1971/72	2.08	$96,803	$30.01	2.10	1,536
1976/77	2.72	$90,796	$30.17	2.27	1,326
1981/82	3.22	$96,210	$32.11	2.23	1,344
% 71-76	30.6	-6.2%	0.5%	8.1%	-13.7%
CHA 76-81	18.2	6.0	6.4	-1.8	1.3
NGE 71-81	54.3	-0.6	7.0	6.2	-12.5
GRP-SPEC					
1971/72	2.05	$114,692	$27.81	2.07	1,992
1976/77	2.03	$108,004	$29.53	2.11	1,733
1981/82	1.87	$122,638	$29.56	2.12	1,957
% 71-76	-1.3	-5.8%	6.2%	1.9%	-13.0%
CHA 76-81	-7.7	13.5	0.1	0.5	12.9
NGE 71-81	-8.9	6.9	6.3	2.4	-1.8

Source: Manitoba Health Services Commission

VI-2-4 SUMMARY

Perusal of Table VI-8 highlights the major shifts that took place over the ten years.

In Winnipeg, a doubling of the number of solo general practitioners during this ten year period has resulted in a drop in their average payments. This, however, is not in proportion to the increase in their numbers. The drop was cushioned by an increase in patient loads. At the same time as solo GPs were increasing patient loads, the other physicians, namely group GPs and specialists, whether group or solo, were showing a drop in patient loads. In spite of a drop in patient load, the other physicians managed to increase, or suffer only a slight loss in average payments. Group GPs countered by increasing the patient contact rate by 26.5% but also lost some revenue per contact of 8.6%. Specialists whether solo or group countered by increasing the revenue per patient as well as increasing the contact rate.

The situation in Brandon was quite different from that in Winnipeg. Brandon during this time experienced only a slight increase in the physician-to-population ratio. In spite of having a larger concentration of physicians than in Winnipeg, physicians in Brandon managed to increase their average payments, over and above fee schedule increases, anywhere from 29.3% in the case of group GPs, to 49.1% for solo GPs. The source of these increases ranged from substantial increases in patient loads of of 9.3% to 53.7%, to various combinations of losses and gains in revenue per contact and in the contact rate.

In the rural areas, less spectacular gains in average payments were achieved during this time. Gains ranged from 0.5% to 15.9%, fueled mostly by increases in patient load or in the contact rate. Some of these gains were counteracted by decreasing average revenue per contact, but not enough to stop the rise in average payments.

To gain an appreciation of the impact of these differential shifts on the increase in payments, it is necessary to look at the accompanying charts (see Charts VI-1 to VI-4). In Chart VI-1, it can be seen that in 1971/72 the average payment to solo GPs was not materially different

Table VI-8

Summary of Practice Changes from 1971/72 to 1981/82

	Physician/ Population Ratio	Total Revenue per Physician	=	Total Revenue per Contact	x	Contacts per Patient	x	Patients per Physician
	%	%		%		%		%
WINNIPEG								
Solo-GPs	99.6	-9.9		-6.7		-9.3		6.5
Grp-GPs	4.0	5.5		-8.6		26.5		-8.7
Solo-Spec	49.3	-0.5		6.0		7.7		-12.9
Grp-Spec	-11.0	4.1		4.2		1.9		-2.0
BRANDON								
Solo-GPs	-14.0	49.1		-17.4		17.4		53.7
Grp-GPs	-2.6	29.3		-17.8		20.9		30.1
Solo-Spec	114.9*	37.4*		20.5*		-13.9*		32.5*
Grp-Spec	-10.0	48.3		17.7		15.3		9.3
RURAL								
Solo-GPs	7.6	15.9		-4.5		10.7		9.6
Grp-GPs	-5.5	10.3		-11.8		11.3		12.4
Solo-Spec	98.9*	40.5*		42.5*		4.7*		-60.1*
Grp-Spec	-15.9	0.5		13.0		-3.0		-8.3
MANITOBA								
Solo-GPs	49.6	0.3		-6.7		-0.3		7.9
Grp-GPs	-0.6	8.8		-11.3		19.1		3.0
Solo-Spec	54.3	-0.6		7.0		6.2		-12.5
Grp-Spec	-8.9	6.9		6.3		2.4		-1.8

*Small number of physicians.

Source: Manitoba Health Services Commission

from region to region. But by 1981/82 Brandon solo GPs were substantially ahead of their colleagues in Winnipeg and in rural areas.

Switching to Chart VI-2, it can be seen that Brandon group GPs made a major upward shift in average payments during this time. Rural group GPs with higher average payments in 1971/72 maintained their lead in 1981/82.

Chart VI-3 illustrates that solo specialists in rural Manitoba suffered a large drop in average payments, however, their numbers are small and this dramatic change may reflect one or two peculiar experiences.

For solo specialists in Winnipeg, average payments diminished marginally from 1971/72 to 1981/82. Following a drop in average payments in 1976/77 from 1971/72 solo specialists in Brandon bounced back by 1981/82 to take first place among solo specialists in the province.

Group specialists, as can be seen in Chart VI-4, had widely differing average payments in 1971/72. However, by 1981/82 the range had diminished substantially. Average payments were almost identical between rural and Winnipeg group specialists, with those in Brandon just slightly behind.

VI-3 COMMONALITY DATA AND PHYSICIANS' PRACTICES

The information presented in the previous sections highlighted the areas where there were changes in physicians' practices over the ten year period. The indicators utilized were the average revenue per contact, the contact rate per patient and the average patient load per physician.

As previously indicated, the apparent patient count (APC) has been increasing more quickly than the population in the past ten years. For this to occur, patients seeking care must be seeing more physicians than in the past (this has been documented in Chapter V), and this in turn translates into physicians having more patients in common with one another. What is required are data which show in more detail where such commonality of patients is increasing, for what sorts of patients being served, and by which doctors.

The commonality of patients by physicians can be analysed by using a matrix with cells that contain the number of patients that physician "i"

Chart VI-1

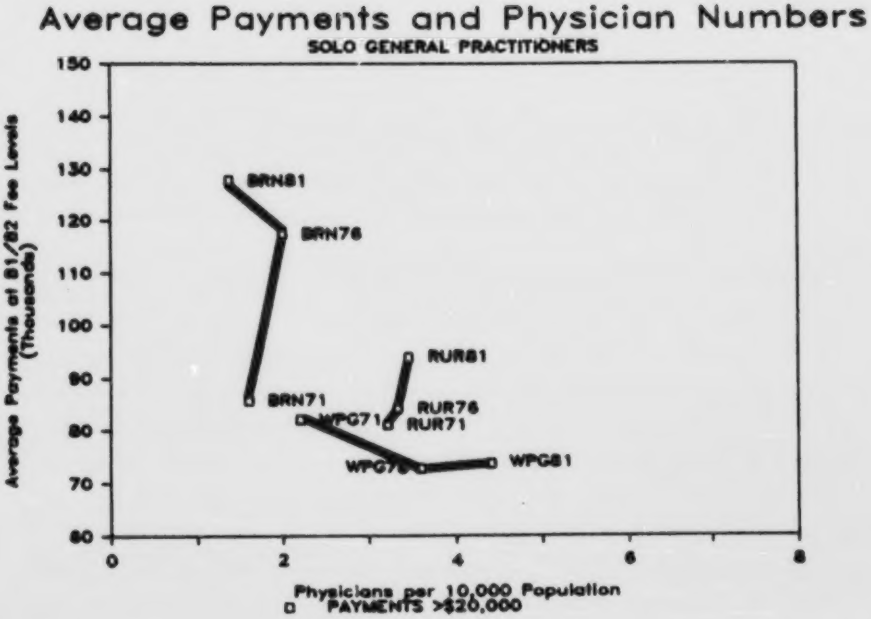

Average Payments and Physician Numbers
SOLO GENERAL PRACTITIONERS
Average Payments at 81/82 Fee Levels (Thousands)
150
140
130
120
110
100
90
80
70
60
BRN81
BRN76
BRN71
RUR81
RUR76
RUR71
WPG71
WPG76
WPG81
0
2
4
6
8
Physicians per 10,000 Population
PAYMENTS >$20,000

Chart VI-2

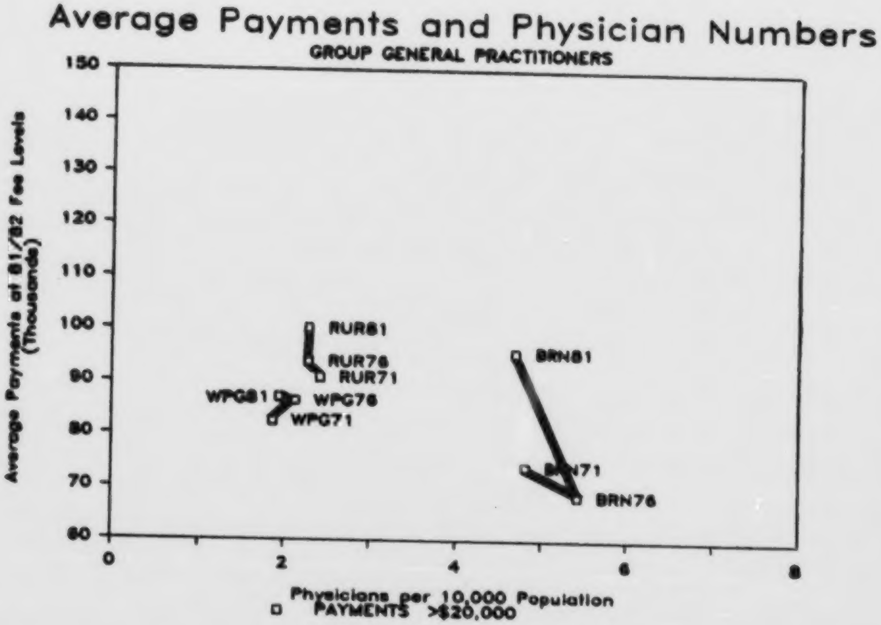

Average Payments and Physician Numbers
GROUP GENERAL PRACTITIONERS
Average Payments at 81/82 Fee Levels (Thousands)
150
140
130
120
110
100
90
80
70
60
RUR81
RUR76
RUR71
WPG81
WPG76
WPG71
BRN81
BRN71
BRN76
0
2
4
6
8
Physicians per 10,000 Population
PAYMENTS >$20,000

Chart VI-3

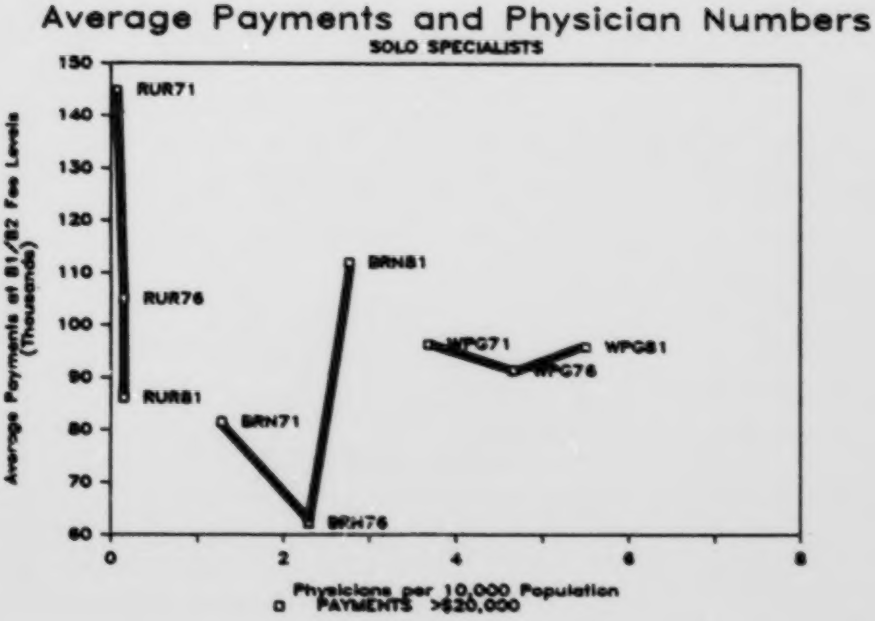
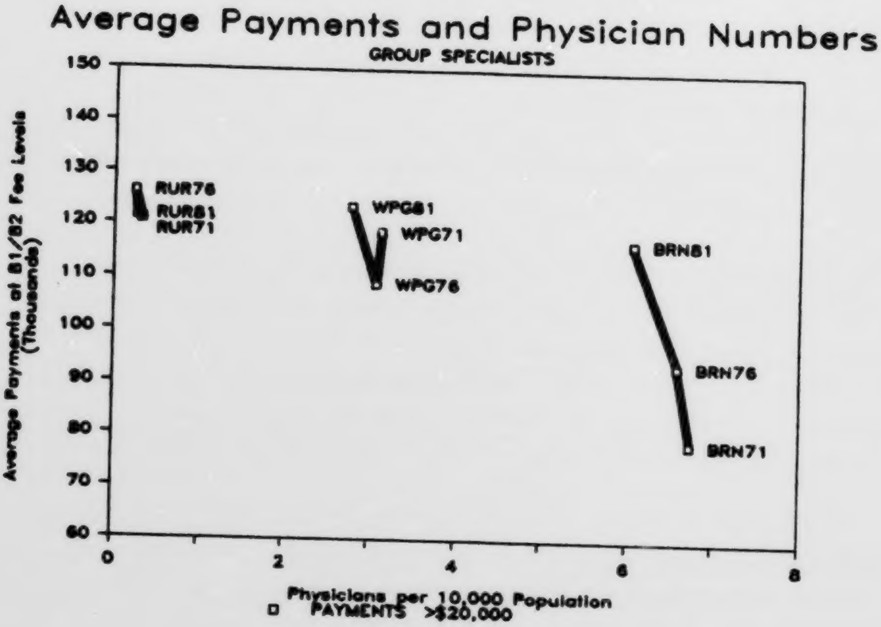

Average Payments and Physician Numbers
SOLO SPECIALISTS
150
140
130
120
110
100
90
80
70
60
Average Payments at 81/82 Fee Levels (Thousands)
RUR71
RUR76
RUR81
BRN71
BRN76
BRN81
WPG71
WPG76
WPG81
0
2
4
6
8
Physicians per 10,000 Population
□ PAYMENTS >$20,000

Chart VI-4


Average Payments and Physician Numbers
GROUP SPECIALISTS
Average Payments at 81/82 Fee Levels (Thousands)
150
140
130
120
110
100
90
80
70
60
RUR76
RUR81
RUR71
WPG81
WPG71
WPG76
BRN81
BRN76
BRN71
0
2
4
6
8
Physicians per 10,000 Population
□ PAYMENTS >$20,000

has in common with physician "j". This matrix will be called the commonality matrix, and the data derived from it will be called commonality data. The following example of a commonality matrix provides the most convenient way of describing the data that will be analysed in the following sections. In this example there are only three physicians, as a result this is a 3 x 3 matrix. If there were 1000 physicians the matrix would be 1000 x 1000.

COMMONALITY MATRIX

PHYSICIAN	1	2	3
1	1,000	100	150
2	100	2,000	250
3	150	250	1,500

Apparent Patient Count (APC) = Sum of the diagonal elements =

1,000 + 2,000 + 1,500 = 4,500

Total Common Patients (TCP) = 1/2 x Sum of the off diagonal elements =

1/2 (100 + 150 + 250 + 100 + 150 + 250) = 500

In this example, physician 3 has 1,500 patients in common with himself, in other words he has a patient load of 1,500 patients. Physician 3 has 150 patients in common with physician 1 and vice versa, physician 1 has 150 patients in common with physician 3. If over time patients are seeing more physicians, whether patient initiated or physician initiated, this will cause an increase in the APC and in the TCP.

If the population in this example is 2,500 people and the discrete patient count (DPC), the number of people seeing a physician at least once during the year, is 2,250 then the following can be calculated: Average number of physicians seen = APC / DPC = 4,500 /2,250 = 2.0 of the population seeing at least one physician during the year = DPC / POP = 2,250 / 2,500 = 90%.

In this example, 90% of the population has seen a physician at least once during the year and these patients have seen on average 2.0 physicians each. If the discrete patient count stays constant, then increases in the apparent patient count are due to patients already seeing physicians, seeing even more physicians. This in turn will also mean that total common patients will be increasing. The measure of commonality of total common patients is of interest in that it provides a tracer regarding the increases in the apparent patient count and where these are taking place. Is the apparent patient count increasing due to:

1) increased commonality of patients within a group practice or amongst solo practitioners, or interaction between groups and solo practitioners;
2) increased commonality of patients within certain specialties, within groups, solos and interactions; or,
3) increased commonality of patients between regions, that is, more rural patients seeing more physicians in Winnipeg more frequently.

VI-3-1 COMMONALITY DATA DEFINITIONS

In examining the data generated by the commonality matrix, an explanation of the headings of the tables and the definitions of variables is required.

The tables are set up in such a way that the headings on the left side are defined in light of the base physician definition at the top of the table. The acronyms used in the tables are the following:

BASE PHYSICIAN:	Location	Practice Type	Speciality
e.g.-	Winnipeg	Solo	General Practice

Location of Practice
e.g. - Winnipeg

SS-SG : Same Specialty - Same Group Practice
OS-SG : Other Specialty - Same Group Practice
SG: All Specialties - Same Group Practice

SS-OG : Same Specialty - Other Group Practice
OS-OG : Other Specialty - Other Group Practice
OG: All Specialties - Other Group Practice

SS-SL : Same Specialty - Solo Practice
OS-SL : Other Specialty - Solo Practice
SL: All Specialties - Solo Practice

SS: All Physicians - Same Specialty
OS: All Physicians - Other Specialty

The definition of specialist in these tables includes general practice as a specialty.

The definition of base physician excludes radiologists, pathologists, and anesthetists. However, the interaction of the base physicians with radiologists, pathologists, and anesthetists is recorded at the bottoms of the tables.

The location of physicians can be Winnipeg, Brandon, and rural Manitoba (i.e., rest of Manitoba excluding Winnipeg and Brandon).

The type of practice can be either a solo or a group practice.

PATIENT MULTIPLIERS

The average common patient ratio is the average ratio of total common patients to the base physicians' average patient loads. It is an indicator of the extent of patient commonality in that it gives the relationship between the apparent patient count (APC) of a particular specialty and the total common patients (TCP). Dividing the TCP by the APC yields a patient multiplier in that the larger the number the greater the degree of commonality. Only when dealing with the commonality within the base physician category can one say anything as to what the base physician category is doing. In all other cases the data are in fact describing what the category under examination is doing with a subset of the base physicians' patients.

REVENUE MULTIPLIERS

When physicians have patients in common with other physicians the revenues generated by the services provided to those patients can be viewed as common patient revenues. By dividing the revenues generated on the common patients by the average gross revenues of the base physicians an index or revenue multiplier is derived which shows the additional revenues generated by other physicians on the pool of patients that are common to the base physicians. This index is free of price effects and does not require indexing to account for increases in the fee schedule. Basically this is an index of the additional revenues generated by other physicians as the commonality of patients is increased.

COMMON PATIENTS' CONTACT RATE

The common patients' contact rate is the contact rate that common patients have with other physicians who have patients in common with the base physician. For example, if physician A is viewed as the base physician and some patients see physician B then one can calculate for those patients who saw both physician A and B the contact rate they had when they saw physician A and the contact rate when they saw physician B.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

This is the percentage that consultations comprise of gross revenues generated by physicians on those patients that are in common with a base physician. For example, if physician A is viewed as the base physician and some of his patients see physician B then one can calculate for those patients who saw both physician A and B the percentage of all revenues derived from those common patients that were billed as consultations by physician B and alternatively the same calculation can be performed on physician A.

VI-3-2 WINNIPEG COMMONALITY DATA WINNIPEG SOLO GENERAL PRACTICE: - PATIENT MULTIPLIERS

In order to assess the impact of a growing number of physicians per capita in Winnipeg from 1971/72 to 1981/82 several key variables have to be examined. One of these is the patient multiplier which shows how physicians have been able to maintain patient loads in light of a relatively stable population base.

During the ten year period from 1971/72 to 1981/82 the largest increase in physicians took place among Winnipeg solo GPs. As shown previously, the average patient load (APL) of Winnipeg solo GPs increased by 6.5% during these ten years but average payments, after adjusting for fee schedule increases, decreased by 9.9%. How were these physicians able to increase their patient loads with a relatively stable population base?

From Table VI-9 it can be seen that in 1981/82 the pool of patients that were also patients of Winnipeg solo GPs, generated a

TABLE VI-9

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: WINNIPEG SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.21	.29	.22	9.1	9.0	5.8	38.1	-24.1	4.8
OS-OG	.40	.40	.46	17.2	12.3	12.2	0.0	15.0	15.0
OG	.61	.69	.68	26.3	21.2	18.0	13.1	-1.4	11.5
SS-SL	.21	.71	.90	9.1	21.8	23.8	238.1	26.8	328.6
OS-SL	.47	.60	.81	20.3	18.5	21.4	27.7	35.0	72.3
SL	.68	1.31	1.71	29.3	40.3	45.2	92.6	30.5	151.5
SS	.42	1.00	1.13	18.1	30.8	29.9	138.1	13.0	169.0
OS	.86	1.00	1.27	37.1	30.8	33.6	16.3	27.0	47.7
Sub-total	1.29	2.00	2.40	55.6	61.5	63.5	55.0	20.0	86.0
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.01	0.0	0.0	0.3	0.0	0.0	0.0
OS-OG	.00	.00	.01	0.0	0.0	0.3	0.0	0.0	0.0
OG	.01	.01	.01	0.4	0.3	0.3	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS	.00	.01	.01	0.0	0.3	0.3	0.0	0.0	0.0
OS	.00	.01	.01	0.0	0.3	0.3	0.0	0.0	0.0
Sub-total	.01	.01	.02	0.4	0.3	0.5	0.0	100.0	100.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.09	.07	.06	3.9	2.2	1.6	-22.2	-14.3	-33.3
OS-OG	.01	.01	.01	0.4	0.3	0.3	0.0	0.0	0.0
OG	.10	.07	.06	4.3	2.2	1.6	-30.0	-14.3	-40.0
SS-SL	.15	.14	.09	6.5	4.3	2.4	-6.7	-35.7	-40.0
OS-SL	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
SL	.15	.15	.09	6.5	4.6	2.4	0.0	-40.0	-40.0
SS	.23	.21	.15	9.9	6.5	4.0	-8.7	-28.6	-34.8
OS	.02	.01	.01	0.8	0.3	0.3	-50.0	0.0	-50.0
Sub-total	.25	.22	.16	10.8	6.8	4.2	-12.0	-27.3	-36.0
TOTAL	1.55	2.24	2.57	66.8	68.9	68.0	44.5	14.7	65.8
Radiology	.38	.38	.36	16.4	11.7	9.5	0.0	-5.3	-5.3
Pathology	.31	.52	.76	13.4	16.0	20.1	67.7	46.2	145.2
Anesthesia	.09	.10	.09	3.9	3.1	2.4	11.1	-10.0	0.0
GRAND TOTAL	2.32	3.25	3.78	100.0	100.0	100.0	40.1	16.3	62.9

patient multiplier of 2.4 as patients of Winnipeg solo GPs and as patients of other physicians in Winnipeg. In other words, Winnipeg solo GP patients were the equivalent of 2.4 patients because not only were they patients of Winnipeg solo GPs, but were also the patients of other physicians in Winnipeg, hence the term patient multiplier. By disaggregating these common patients by region, specialty and by type of practice the source of patients of physicians can be discerned.

From 1971/72 to 1976/77 the patient multiplier for Winnipeg solo GPs with other physicians in Winnipeg went from 1.29 common patients per average patient to 2.00, an increase of 55.0%. This coincides with a growth rate of Winnipeg solo GPs of 63.4% during the same period.

During the 1976/77 to 1981/82 period the patient multiplier increased by 20.0%, about the same as the increase of 22.2% in the number of Winnipeg solo GPs per capita. This increase in common patients, however, is concentrated in an increase in the number of patients Winnipeg solo GPs have in common with other Winnipeg solo GPs. From 1971/72 to 1981/82 the patient multiplier of patients that Winnipeg solo GPs had in common with one another increased from 0.21 to 0.90 or 328.6%. During this period the patient multiplier of solo GPs in Winnipeg and other physicians in Winnipeg who were in a group practice increased by a modest 15.0%. The pool of common patients of Winnipeg solo GPs was growing over time but the growth was taking place among Winnipeg solo GPs and with Winnipeg solo specialists. Either patients en masse decided to visit relatively more Winnipeg solo GPs during these ten years or an informal referral network was developing among Winnipeg solo GPs.

In these ten years the commonality of patients between GPs in group practice and GPs in solo practice diminished from 9.1% of total common patients in 1971/72 to 5.8% in 1981/82. The commonality of patients among Winnipeg solo GPs grew from 9.1% of total common patients in 1971/72 to 23.8% in 1981/82. However the commonality of patients between solo GPs in Winnipeg and specialists in Winnipeg decreased in relative terms from 37.1% to 33.6% during these ten years.

The commonality of patients between Winnipeg solo GPs and physicians in the other regions also changed during these ten years. Winnipeg solo

GPs had 11.0% of their patients in common with rural physicians in 1971/72, but the degree of commonality decreased so that by 1981/82 only a 4.2% commonality of patients existed with rural physicians. Therefore, during this ten year period the commonality of patients among solo GPs in Winnipeg increased dramatically in and amongst themselves, but patient commonality in relative terms decreased with group practices in Winnipeg and with physicians in the rural areas.

Patient commonality between Winnipeg solo GPs and Brandon physicians was virtually non-existant in 1971/72 and remained so over the ten years.

Therefore, the growth in the average patient load (APL) of Winnipeg solo GPs during the past ten years appears to have taken place not due to their serving significantly more patients from outside Winnipeg but from Winnipeg solo GPs as a whole, serving an existing patient load in Winnipeg more intensively. Rather than each Winnipeg solo GP servicing his/her individual patient loads more intensively, it seems that patients were being seen by more Winnipeg solo GPs. From the point of view of the individual Winnipeg solo GP, the contact rate per patient as well as the revenue per contact in constant 1981/82 fee dollars was diminishing. However, the pool of Winnipeg solo GP common patients was such that the patient multiplier of that pool of patients in 1981/82 was .90, compared to .21 in 1971/72. In other words, a patient of a Winnipeg solo GP in 1971/72 translated into another .21 patients for other Winnipeg solo GPs. By 1981/82, however, that same patient was being translated into another .90 patients for other Winnipeg solo GPs.

REVENUE MULTIPLIERS

From Table VI-10 it can be seen that in 1971/72 the revenue multiplier for patients common to Winnipeg solo GPs and other physicians in Winnipeg was 1.67. By 1976/77 it had increased to 2.86 or by 71.3% and by 1981/82 it reached 3.46, another 21.0%. This means that for every $1.00 of fees generated by Winnipeg solo GPs, an additional $1.67 was generated by other physicians in Winnipeg in 1971/72 and an additional $3.46 in 1981/82 in constant 1981/82 fee dollars.

TABLE VI-10

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: WINNIPEG SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.17	.27	.23	7.0	6.9	4.8	58.8	-14.8	35.3
OS-OG	.54	.74	.76	22.2	18.8	15.9	37.0	2.7	40.7
OG	.72	1.01	.99	29.6	25.7	20.7	40.3	-2.0	37.5
SS-SL	.24	.64	.86	9.9	16.3	18.0	166.7	34.4	258.3
OS-SL	.72	1.21	1.61	29.6	30.8	33.7	68.1	33.1	123.6
SL	.95	1.85	2.47	39.1	47.1	51.7	94.7	33.5	160.0
SS	.41	.91	1.09	16.9	23.2	22.8	122.0	19.8	165.9
OS	1.26	1.95	2.37	51.9	49.6	49.6	54.8	21.5	98.1
Sub-total	1.67	2.86	3.46	68.7	72.8	72.4	71.3	21.0	107.2
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
OS-OG	.00	.01	.01	0.0	0.3	0.2	0.0	0.0	0.0
OG	.01	.01	.02	0.4	0.3	0.4	0.0	100.0	100.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
SS	.00	.01	.01	0.0	0.3	0.2	0.0	0.0	0.0
OS	.01	.01	.01	0.4	0.3	0.2	0.0	0.0	0.0
Sub-total	.01	.01	.02	0.4	0.3	0.4	0.0	100.0	100.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.08	.07	.06	3.3	1.8	1.3	-12.5	-14.3	-25.0
OS-OG	.02	.01	.01	0.8	0.3	0.2	-50.0	0.0	-50.0
OG	.10	.08	.06	4.1	2.0	1.3	-20.0	-25.0	-40.0
SS-SL	.15	.16	.11	6.2	4.1	2.3	6.7	-31.3	-26.7
OS-SL	.01	.01	.00	0.4	0.3	0.0	0.0	-100.0	-100.0
SL	.16	.17	.11	6.6	4.3	2.3	6.3	-35.3	-31.3
SS	.23	.23	.17	9.5	5.9	3.6	0.0	-26.1	-26.1
OS	.03	.02	.01	1.2	0.5	0.2	-33.3	-50.0	-66.7
Sub-total	.25	.25	.18	10.3	6.4	3.8	0.0	-28.0	-28.0
TOTAL	1.93	3.12	3.66	79.4	79.4	76.6	61.7	17.3	89.6
Radiology	.22	.27	.30	9.1	6.9	6.3	22.7	11.1	36.4
Pathology	.16	.38	.66	6.6	9.7	13.8	137.5	73.7	312.5
Anesthesia	.12	.17	.16	4.9	4.3	3.3	41.7	-5.9	33.3
GRAND TOTAL	2.43	3.93	4.78	100.0	100.0	100.0	61.7	21.6	96.7

The revenue multiplier increased the most among the patients that Winnipeg solo GPs had in common with one another, an increase of 258.3% in ten years with the largest increase, 166.7%, from 1971/72 to 1976/77. Patients of Winnipeg solo GPs in common with physicians in group practices only showed an increase of 37.5% in the revenue multiplier over the ten years. The largest increases in the revenue multiplier occurred with solo physicians whether GPs or specialists.

COMMON PATIENTS' CONTACT RATE

In Table VI-11 it can be seen that the average number of contacts per patient of those patients common to Winnipeg solo GPs and other Winnipeg physicians did not increase dramatically over the ten years, only 9.7%. However, there were differentials in growth rates between specialties and by types of practice. The contact rate per patient by Winnipeg group GPs increased from 1.99 contacts per patient to 2.76 over ten years for an increase of 38.7%. Winnipeg group specialists, however, only increased their contact rate with these patients by 3.5%. The contact rate of patients that Winnipeg solo GPs had in common decreased over the ten years by 13.5%. However, Winnipeg solo specialists who had these patients in common with Winnipeg solo GPs increased their contact rate by 13.7%.

The contact rate of Winnipeg solo GP patients in common with Brandon physicians showed a marginal increase of 3.1% by Brandon physicians, whereas, with rural physicians the contact rate increased by 8.8% from a higher base of 2.49 contacts per patient in 1971/72.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From Table VI-12 it can be seen that the only significant change in consultations as a percentage of gross revenues was generated by group specialists on patients they had in common with Winnipeg solo GPs; an increase of 26.8% over the ten years, from 36.86% in 1971/72 to 46.74% in 1981/82. This indicates that group practice specialists must have become more important to Winnipeg solo GPs as a source of advice for their patients.

TABLE VI-11

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: WINNIPEG SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	1.99	2.31	2.76	16.1	19.5	38.7
GS-GG	2.02	2.11	2.09	4.5	-0.9	3.5
GG	2.01	2.19	2.31	9.0	5.5	14.9
SS-SL	2.89	2.28	2.50	-21.1	9.6	-13.5
GS-SL	2.04	2.27	2.32	11.3	2.2	13.7
SL	2.31	2.27	2.41	-1.7	6.2	4.3
SS	2.44	2.29	2.55	-6.1	11.4	4.5
GS	2.04	2.20	2.23	7.8	1.4	9.3
Sub-total	2.17	2.25	2.38	3.7	5.8	9.7
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	1.61	1.72	1.92	6.8	11.6	19.3
GS-GG	1.78	1.67	2.04	-6.2	22.2	14.6
GG	1.70	1.70	1.97	0.0	15.9	15.9
SS-SL	2.86	2.24	2.76	-21.7	23.2	-3.5
GS-SL	2.16	2.88	1.70	33.3	-41.0	-21.3
SL	2.59	2.45	2.04	-5.4	-16.7	-21.2
SS	2.00	1.90	2.03	-5.0	6.8	1.5
GS	1.85	1.92	1.93	3.8	0.5	4.3
Sub-total	1.93	1.91	1.99	-1.0	4.2	3.1
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	2.29	2.19	2.40	-4.4	9.6	4.8
GS-GG	2.29	2.03	1.97	-11.4	-3.0	-14.0
GG	2.29	2.18	2.36	-4.8	8.3	3.1
SS-SL	2.62	2.72	2.95	3.8	8.5	12.6
GS-SL	2.33	1.64	2.61	-29.6	59.1	12.0
SL	2.61	2.66	2.94	1.9	10.5	12.6
SS	2.50	2.55	2.74	2.0	7.5	9.6
GS	2.30	1.80	2.12	-21.7	17.8	-7.8
Sub-total	2.49	2.50	2.71	0.4	8.4	8.8
TOTAL	2.22	2.27	2.40	2.3	5.7	8.1
Radiology	1.27	1.20	.02	-5.5	-98.3	-98.4
Pathology	1.67	1.80	1.92	7.8	6.7	15.0
Anesthesia	1.13	1.11	1.11	-1.8	0.0	-1.8
GRAND TOTAL	1.95	2.03	2.05	4.1	1.0	5.1

TABLE VI-12

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: WINNIPEG SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.41	1.86	1.54	-22.8	-17.2	-36.1
OS-OG	36.86	42.67	46.74	15.8	9.5	26.8
OG	28.45	31.63	36.22	11.2	14.5	27.3
SS-SL	3.87	2.00	2.77	-48.3	38.5	-28.4
OS-SL	41.70	35.45	41.18	-15.0	16.2	-1.2
SL	32.29	23.92	27.85	-25.9	16.4	-13.8
SS	3.25	1.96	2.51	-39.7	28.1	-22.8
OS	39.62	38.18	42.96	-3.6	12.5	8.4
Sub-total	30.65	26.64	30.25	-13.1	13.6	-1.3
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	5.87	19.71	4.96	235.8	-74.8	-15.5
OS-OG	33.16	36.61	39.31	10.4	7.4	18.5
OG	25.65	30.41	25.24	18.6	-17.0	-1.6
SS-SL	3.49	14.38	13.07	312.0	-9.1	274.5
OS-SL	19.09	22.52	33.00	18.0	46.5	72.9
SL	9.19	17.75	27.63	93.1	55.7	200.7
SS	4.77	17.73	6.37	271.7	-64.1	33.5
OS	30.94	33.85	37.52	9.4	10.8	21.3
Sub-total	21.18	26.98	25.82	27.4	-4.3	21.9
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	3.82	5.86	6.88	53.4	17.4	80.1
OS-OG	21.23	29.33	38.12	38.2	30.0	79.6
OG	6.99	8.39	10.52	20.0	25.4	50.5
SS-SL	1.02	2.93	3.82	187.3	30.4	274.5
OS-SL	11.53	22.57	35.17	95.8	55.8	205.0
SL	1.65	3.80	5.05	130.3	32.9	206.1
SS	1.99	3.81	4.87	91.5	27.8	144.7
OS	17.82	26.15	37.02	46.7	41.6	107.7
Sub-total	3.68	5.24	7.03	42.4	34.2	91.0
TOTAL	27.05	24.94	29.09	-7.8	16.6	7.5
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	4.30	2.01	1.14	-53.3	-43.3	-73.5
Anesthesia	5.09	10.23	14.65	101.0	43.2	187.8
GRAND TOTAL	21.50	19.79	22.29	-8.0	12.6	3.7

WINNIPEG GROUP GENERAL PRACTICE:

From 1971/72 to 1976/77 the number of Winnipeg group GPs per capita increased by 14.2% to be followed by a decrease of 8.9% from 1976/77 to 1981/82. Overall in those ten years, the net increase per capita was 4.01%. Given the phenomenon of increased patient commonality among Winnipeg solo GPs during the past ten years, what practice changes, if any, took place among Winnipeg group GPs?

As shown previously, Winnipeg group GPs managed to increase their average payments, after adjusting for fee schedule increases, by 5.5% over the ten years. This was achieved by increasing the contact rate with their patients by 26.5% with some loss in revenue per contact of 8.6%. However, they also suffered a loss of patients in that the average patient load of Winnipeg group GPs decreased by 8.7%.

Examination of Table VI-13 shows that in 1981/82 the pool of patients that were also patients of Winnipeg group GPs generated a patient multiplier of 2.01 as patients of other physicians in Winnipeg.

From 1971/72 to 1976/77 the patient multiplier for Winnipeg group GPs with other GPs in their own group practice increased slightly from 0.43 to 0.45. From 1976/77 to 1981/82 the patient multiplier fell from 0.45 to 0.41. Not only did the patient multiplier fall within GPs of the same group practice, but also with the specialists in the same group practice from 0.19 in 1971/72 to 0.13 in 1981/82. Overall in these ten years, the degree of patient commonality between GPs and other physicians within the same group practice decreased.

During this period the same phenomenon was occurring between group GPs from different group practices. Namely, the patient multiplier for Winnipeg group GPs with patients in common with other group GPs fell from 0.21 to 0.14, a drop of 33.3%.

In fact, the only group in which patient commonality was increasing was with solo practitioners, especially with solo GPs. The patient multiplier of Winnipeg group GPs with Winnipeg solo GPs increased from 0.18 to 0.43 over the ten years.

As previously stated, Winnipeg group GPs saw their average patient load fall 8.7% over ten years, whereas solo GPs saw theirs rise by 6.5%.

TABLE VI-13

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: WINNIPEG GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.43	.45	.41	14.1	12.7	11.6	4.7	-8.9	-4.7
OS-SG	.19	.15	.13	6.2	4.2	3.7	-21.1	-13.3	-31.6
SG	.62	.60	.54	20.3	17.0	15.3	-3.2	-10.0	-12.9
SS-OG	.21	.24	.14	6.9	6.8	4.0	14.3	-41.7	-33.3
OS-OG	.40	.32	.38	13.1	9.1	10.8	-20.0	18.8	-5.0
OG	.60	.57	.52	19.7	16.1	14.7	-5.0	-8.8	-13.3
SS-SL	.18	.39	.43	5.9	11.0	12.2	116.7	10.3	138.9
OS-SL	.48	.47	.53	15.7	13.3	15.0	-2.1	12.8	10.4
SL	.66	.85	.96	21.6	24.1	27.2	28.8	12.9	45.5
SS	.82	1.08	.97	26.9	30.6	27.5	31.7	-10.2	18.3
OS	1.06	.94	1.04	34.8	26.6	29.5	-11.3	10.6	-1.9
Sub-total	1.88	2.02	2.01	61.6	57.2	56.9	7.4	-0.5	6.9
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OG	.00	.00	.01	0.0	0.0	0.3	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS	.00	.00	.01	0.0	0.0	0.3	0.0	0.0	0.0
Sub-total	.01	.01	.01	0.3	0.3	0.3	0.0	0.0	0.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.03	.04	1.0	0.8	1.1	0.0	33.3	33.3
OS-OG	.00	.00	.01	0.0	0.0	0.3	0.0	0.0	0.0
OG	.03	.04	.04	1.0	1.1	1.1	33.3	0.0	33.3
SS-SL	.09	.06	.05	3.0	1.7	1.4	-33.3	-16.7	-44.4
OS-SL	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
SL	.09	.06	.05	3.0	1.7	1.4	-33.3	-16.7	-44.4
SS	.12	.09	.09	3.9	2.5	2.5	-25.0	0.0	-25.0
OS	.00	.01	.01	0.0	0.3	0.3	0.0	0.0	0.0
Sub-total	.12	.10	.09	3.9	2.8	2.5	-16.7	-10.0	-25.0
TOTAL	2.01	2.13	2.12	65.9	60.3	60.1	6.0	-0.5	5.5
Radiology	.48	.52	.45	15.7	14.7	12.7	8.3	-13.5	-6.3
Pathology	.45	.79	.91	14.8	22.4	25.8	75.6	15.2	102.2
Anesthesia	.11	.09	.06	3.6	2.5	1.7	-18.2	-33.3	-45.5
GRAND TOTAL	3.05	3.53	3.53	100.0	100.0	100.0	15.7	0.0	15.7

It appears that Winnipeg group GPs rather than increasing the patient multiplier within their own group practice and with other group practices, reacted to the increased supply of solo GPs by increasing the contact rate with their existing patients by 26.5% (See Table VI-4).

Increasing numbers of physicians have increased the average number of patients seen as well as the contact rate overall for the Winnipeg population. However, the way this was achieved depends on the type of practice. Solo GPs tended to increase the patient multiplier within their peer group whereas group GPs tended to increase the contact rate per patient.

Winnipeg group GPs did not see an increase in the commonality of patients with physicians from Brandon or rural Manitoba. Patient multipliers with non-Winnipeg physicians remained constant at very low levels or fell over the ten years.

REVENUE MULTIPLIERS

Examination of Table VI-14 shows that over the ten years the pool of patients that were common to Winnipeg group GPs and to other physicians in Winnipeg showed a decrease in their revenue multiplier of 6.8% from 3.07 in 1971/72 to 2.86 in 1981/82.

In 1971/72, physicians in Winnipeg group practices generated $0.76 on every $1.00 of billings by GPs in the group compared to $0.61 in 1981/82, a drop of 19.7%. The largest drop occurred with specialists in the group with a drop of 40.0%. Group practice physicians decreased the revenues generated on patients that they had in common with their GPs over the ten years.

The same phenomenon was displayed by physicians in other group practices. Over the ten years the revenue multiplier fell by 20.6% for group practices whose patients were also patients of Winnipeg group GPs in other group practices.

However, Winnipeg solo GPs increased the revenue multiplier by 42.9% on those patients they had in common with Winnipeg group GPs.

TABLE VI-14

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: WINNIPEG GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.41	.44	.40	9.9	10.1	9.6	7.3	-9.1	-2.4
OS-SG	.35	.31	.21	8.5	7.1	5.0	-11.4	-32.3	-40.0
SG	.76	.75	.61	18.4	17.2	14.7	-1.3	-18.7	-19.7
SS-OG	.24	.26	.15	5.8	6.0	3.6	8.3	-42.3	-37.5
OS-OG	.79	.70	.66	19.1	16.1	15.9	-11.4	-5.7	-16.5
OG	1.02	.96	.81	24.7	22.1	19.5	-5.9	-15.6	-20.6
SS-SL	.28	.39	.40	6.8	9.0	9.6	39.3	2.6	42.9
OS-SL	1.00	1.04	1.03	24.2	23.9	24.8	4.0	-1.0	3.0
SL	1.28	1.43	1.44	31.0	32.9	34.6	11.7	0.7	12.5
SS	.93	1.09	.95	22.5	25.1	22.8	17.2	-12.8	2.2
OS	2.13	2.05	1.91	51.6	47.1	45.9	-3.8	-6.8	-10.3
Sub-total	3.07	3.14	2.86	74.3	72.2	68.8	2.3	-8.9	-6.8
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
OG	.00	.01	.01	0.0	0.2	0.2	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
Sub-total	.01	.01	.01	0.2	0.2	0.2	0.0	0.0	0.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.03	.04	0.7	0.7	1.0	0.0	33.3	33.3
OS-OG	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
OG	.04	.04	.04	1.0	0.9	1.0	0.0	0.0	0.0
SS-SL	.10	.06	.06	2.4	1.4	1.4	-40.0	0.0	-40.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.10	.06	.06	2.4	1.4	1.4	-40.0	0.0	-40.0
SS	.14	.10	.09	3.4	2.3	2.2	-28.6	-10.0	-35.7
OS	.01	.01	.01	0.2	0.2	0.2	0.0	0.0	0.0
Sub-total	.14	.10	.11	3.4	2.3	2.6	-28.6	10.0	-21.4
TOTAL	3.22	3.25	2.98	78.0	74.7	71.6	0.9	-8.3	-7.5
Radiology	.40	.40	.34	9.7	9.2	8.2	0.0	-15.0	-15.0
Pathology	.35	.56	.73	8.5	12.9	17.5	60.0	30.4	108.6
Anesthesia	.18	.14	.11	4.4	3.2	2.6	-22.2	-21.4	-38.9
GRAND TOTAL	4.13	4.35	4.16	100.0	100.0	100.0	5.3	-4.4	0.7

COMMON PATIENTS' CONTACT RATE

From the common patients' contact rate in Table VI-15 it can be seen that Winnipeg group GPs increased the contact rate of patients common to other GPs in their group practice by 24.4% over the ten years. GPs in other group practices did almost the same thing and increased the contact rate by 22.2%. However, Winnipeg solo GPs diminished their contact rates on these common patients by 16.0%.

It appears that Winnipeg group GPs increased their revenue per patient mainly by increasing the contact rate per patient whereas Winnipeg solo GPs saw their contact rate per common patient drop by 16.0%.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

Table VI-16 shows that consultation revenue on common patients within the group practices in Winnipeg increased by 25.9% for Winnipeg group specialists. From generating 40.7% of their gross revenues from consultations on patients in common with Winnipeg group GPs in the same group practice in 1971/72 it increased to 51.2% by 1981/82. It appears that the drop in the contact rate for Winnipeg group specialists with patients in common with GPs in the same group practice was more than compensated by an increase in the billings for consultations by specialists in the same group.

Interestingly, consultation revenue increased even more over the ten years, a 44.5% increase for specialists in other group practices who had patients in common with Winnipeg group GPs. Also there was little growth in the consultation revenues generated by Winnipeg solo specialists on these common patients, only an increase of 5.2% over the ten years.

It appears that greater formal cooperation had taken place between Winnipeg's group practices over the ten years as witnessed through an increase in the revenues generated through consultations on patients common to group practitioners in the city.

WINNIPEG SOLO SPECIALISTS:

The increase in Winnipeg solo specialists during 1971/72 to 1981/82 at 49.3% was not as dramatic as the 99.6% increase in Winnipeg solo GPs

TABLE VI-15

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: WINNIPEG GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	2.38	2.58	2.96	8.4	14.7	24.4
OS-SG	2.09	2.18	1.94	4.3	-11.0	-7.2
SG	2.29	2.48	2.72	8.3	9.7	18.8
SS-OG	2.07	2.11	2.53	1.9	19.9	22.2
OS-OG	2.05	2.06	1.95	0.5	-5.3	-4.9
OG	2.06	2.08	2.11	1.0	1.4	2.4
SS-SL	2.87	2.26	2.41	-21.3	6.6	-16.0
OS-SL	2.13	2.31	2.22	8.5	-3.9	4.2
SL	2.34	2.29	2.30	-2.1	0.4	-1.7
SS	2.41	2.36	2.66	-2.1	12.7	10.4
OS	2.09	2.20	2.09	5.3	-5.0	0.0
Sub-total	2.23	2.29	2.36	2.7	3.1	5.8
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.61	1.75	1.85	8.7	5.7	14.9
OS-OG	2.01	1.81	1.98	-10.0	9.4	-1.5
OG	1.80	1.77	1.91	-1.7	7.9	6.1
SS-SL	3.36	1.90	2.98	-43.5	56.8	-11.3
OS-SL	2.18	2.95	1.64	35.3	-44.4	-24.8
SL	2.91	2.24	2.08	-23.0	-7.1	-28.5
SS	2.00	1.79	2.06	-10.5	15.1	3.0
OS	2.03	2.06	1.86	1.5	-9.7	-8.4
Sub-total	2.01	1.89	1.96	-6.0	3.7	-2.5
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.18	2.18	2.29	0.0	5.0	5.0
OS-OG	2.31	2.20	2.40	-4.8	9.1	3.9
OG	2.19	2.18	2.30	-0.5	5.5	5.0
SS-SL	2.39	2.49	2.85	4.2	14.5	19.2
OS-SL	2.60	1.36	3.40	-47.7	150.0	30.8
SL	2.40	2.40	2.86	0.0	19.2	19.2
SS	2.34	2.38	2.61	1.7	9.7	11.5
OS	2.38	1.70	2.58	-28.6	51.8	8.4
Sub-total	2.34	2.32	2.61	-0.9	12.5	11.5
TOTAL	2.24	2.29	2.37	2.2	3.5	5.8
Radiology	1.32	1.24	.01	-6.1	-99.2	-99.2
Pathology	1.71	1.82	1.97	6.4	8.2	15.2
Anesthesia	1.15	1.10	1.11	-4.3	0.9	-3.5
GRAND TOTAL	1.98	2.00	1.95	1.0	-2.5	-1.5

TABLE VI-16

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: WINNIPEG GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	1.31	1.18	.93	-9.9	-21.2	-29.0
OS-SG	40.65	42.60	51.17	4.8	20.1	25.9
SG	19.20	18.17	18.42	-5.4	1.4	-4.1
SS-OG	1.99	2.16	2.48	8.5	14.8	24.6
OS-OG	36.97	46.75	53.44	26.5	14.3	44.5
OG	28.89	34.66	43.97	20.0	26.9	52.2
SS-SL	4.43	2.56	3.96	-42.2	54.7	-10.6
OS-SL	41.60	38.02	43.78	-8.6	15.1	5.2
SL	33.38	28.37	32.58	-15.0	14.8	-2.4
SS	2.43	1.91	2.46	-21.4	28.8	1.2
OS	39.73	41.69	47.95	4.9	15.0	20.7
Sub-total	28.37	27.87	32.80	-1.8	17.7	15.6
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	9.05	8.82	6.19	-2.5	-29.8	-31.6
OS-OG	20.72	29.89	39.47	44.3	32.1	90.5
OG	16.38	20.11	28.81	22.8	43.3	75.9
SS-SL	.36	9.66	10.71	2583.3	10.9	2875.0
OS-SL	13.60	28.06	33.09	106.3	17.9	143.3
SL	4.95	17.67	27.41	257.0	55.1	453.7
SS	5.57	9.08	7.31	63.0	-19.5	31.2
OS	19.49	29.46	37.48	51.2	27.2	92.3
Sub-total	13.23	19.45	28.40	47.0	46.0	114.7
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.40	2.15	4.74	-10.4	120.5	97.5
OS-OG	14.39	16.60	35.65	15.4	114.8	147.7
OG	3.76	3.80	10.65	1.1	180.3	183.2
SS-SL	3.16	1.83	2.06	-42.1	12.6	-34.8
OS-SL	4.06	9.07	21.12	123.4	132.9	420.2
SL	3.17	2.15	3.47	-32.2	61.4	9.5
SS	2.96	1.94	3.07	-34.5	58.2	3.7
OS	11.63	13.56	30.43	16.6	124.4	161.7
Sub-total	3.33	2.76	6.40	-17.1	131.9	92.2
TOTAL	27.24	27.06	31.83	-0.7	17.6	16.9
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	3.98	1.81	.74	-54.5	-59.1	-81.4
Anesthesia	7.60	8.07	14.09	6.2	74.6	85.4
GRAND TOTAL	21.18	20.20	22.81	-4.6	12.9	7.7

as previously shown in Table VI-4. Their average payments, after adjusting for fee schedule increases, remained essentially unchanged. However, the manner in which these revenues were generated changed over these ten years. Winnipeg solo specialists saw a drop in their average patient load (APL) of 12.9% but compensated for this by increasing their revenue per contact by 6.0% as well as increasing their patient contact rate by 7.7%.

It can be seen from Table VI-17 that in 1981/82, the pool of patients that were also patients of Winnipeg solo specialists generated a multiplier of 3.21 as patients of other physicians in Winnipeg. This was a 52.1% increase over the multiplier of 2.11 in 1971/72. The largest increase during these ten years in the patient commonality of Winnipeg solo specialists was with other solo specialists in the same specialty, an increase of 171.4%. Most of the increase, 119.2%, took place in the last five year period. Patient commonality among solo specialists in the same specialty and their peers in group practice also increased, but at the lower rate of 108.3%. However, this increase in commonality was concentrated exclusively in the period from 1976/77 to 1981/82. Increased patient commonality occurred with other specialists including GPs, but at a lower rate of 81.3% over ten years, with most of the increase, 40.7%, taking place in the first five years.

What is intriguing about this increase in commonality is its timing in relation to the decrease in the average patient load and in fee adjusted gross revenues for Winnipeg solo specialists. From Table VI-4 it can be seen that all of the decrease in average patient load occurred in the first five years with a loss of 14.0%, coupled with a loss of fee adjusted average gross revenues of 5.2%, followed by a slight gain in patient load of 1.4%, coupled with a gain in fee adjusted gross revenues of 5.0% in the last five years. From the commonality data in Table VI-17 it can be seen that in the first five years there was only a 23.8% increase in commonality of patients by Winnipeg solo specialists in the same specialty with other solo specialists in the same specialty. The large increase took place from 1976/77 to 1981/82 at 119.2%.

TABLE VI-17

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: WINNIPEG SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0				
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.12	.12	.25	3.5	3.0	0.0	0.0	0.0	0.0
OS-OG	.87	.77	.74	25.4	19.3	0.0	0.0	0.0	0.0
OG	.99	.88	.98	28.9	22.0	5.1	0.0	108.3	108.3
SS-SL	.21	.26	.57	6.1	6.5	15.0	-11.5	-3.9	-14.9
OS-SL	.91	1.28	1.65	26.6	32.0	19.9	-11.1	11.4	-1.0
SL	1.12	1.54	2.23	32.7	38.5	11.6	23.8	119.2	171.4
SS	.33	.38	.82	9.6	9.5	33.5	40.7	28.9	81.3
OS	1.78	2.04	2.39	52.0	51.0	45.3	37.5	44.8	99.1
						16.7	15.2	115.8	148.5
						48.6	14.6	17.2	34.3
Sub-total	2.11	2.42	3.21	61.7	60.5	65.2	14.7	32.6	52.1
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0				
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.02	.01	.01	0.6	0.3	0.0	0.0	0.0	0.0
OG	.02	.01	.02	0.6	0.3	0.0	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.2	-50.0	0.0	-50.0
OS-SL	.01	.00	.01	0.3	0.0	0.4	-50.0	100.0	0.0
SL	.01	.01	.01	0.3	0.3	0.0	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.2	-100.0	0.0	0.0
OS	.03	.02	.02	0.9	0.5	0.2	0.0	0.0	0.0
						0.0	0.0	0.0	0.0
						0.4	-33.3	0.0	-33.3
Sub-total	.03	.02	.02	0.9	0.5	0.4	-33.3	0.0	-33.3
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0				
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.09	.10	.14	2.6	2.5	0.0	0.0	0.0	0.0
OG	.09	.10	.14	2.6	2.5	0.0	0.0	0.0	0.0
SS-SL	.00	.01	.00	0.0	0.3	2.8	11.1	40.0	55.6
OS-SL	.17	.12	.15	5.0	3.0	2.8	11.1	40.0	55.6
SL	.17	.13	.15	5.0	3.3	0.0	0.0	-100.0	0.0
SS	.00	.01	.00	0.0	0.3	3.0	-29.4	25.0	-11.8
OS	.26	.22	.29	7.6	5.5	3.0	-23.5	15.4	-11.8
						0.0	0.0	-100.0	0.0
						5.9	-15.4	31.8	11.5
Sub-total	.26	.23	.29	7.6	5.8	5.9	-11.5	26.1	11.5
TOTAL	2.40	2.67	3.52	70.2	66.8	71.5	11.3	31.8	46.7
Radiology	.44	.49	.41	12.9	12.3	8.3	11.4	-16.3	-6.8
Pathology	.40	.66	.79	11.7	16.5	16.1	65.0	19.7	97.5
Anesthesia	.17	.18	.19	5.0	4.5	3.9	5.9	5.6	11.8
GRAND TOTAL	3.42	4.00	4.92	100.0	100.0	100.0	17.0	23.0	43.9

It appears that Winnipeg solo specialists reacted to a declining average patient load from 1971/72 to 1981/82 by increasing the degree of patient commonality within their peer group. In so doing they reversed the decline in average patient load and in their fee adjusted average gross revenues.

The commonality of patients between Winnipeg solo specialists and physicians from other regions also changed during these ten years. Commonality of patients with physicians from rural Manitoba and Brandon declined in relative terms over the ten years, indicating that they were increasing their average patient loads from a pool of Winnipeg patients.

REVENUE MULTIPLIERS

The revenue multiplier of the pool of patients that Winnipeg solo specialists had in common with other physicians in Winnipeg increased from 2.24 in 1971/72 to 3.58 by 1981/82, an increase of 59.8%, as can be seen in Table VI-18. Furthermore the bulk of the increase in the multiplier took place among the common patients of specialists of the same specialty, whether in solo or group practice. For instance, Winnipeg group specialists increased their revenue multiplier for patients they had in common with Winnipeg solo specialists by 92.3% over ten years, whereas Winnipeg solo specialists increased their revenue multipliers by 138.5% during the same time. On the other hand, the growth rate of revenue multipliers on these common patients by solo specialists in a differert specialty increased by 84.4%, and for those in group practice it decreased by 6.6%.

It appears that the increase in revenue multipliers was greatest with patients who were common to physicians in the same specialty, whether in group or solo practice, rather than with physicians in a different specialty.

COMMON PATIENTS' CONTACT RATE

From perusal of Table VI-19 it can be seen that the contact rate per patient for patients common to Winnipeg solo specialists and other physicians in Winnipeg has increased only 7.6% over the ten years. The

TABLE VI-18

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: WINNIPEG SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.13	.12	.25	4.2	3.5	5.1	-7.7	108.3	92.3
OS-OG	.76	.67	.71	24.6	19.6	14.5	-11.8	6.0	-6.6
OG	.89	.79	.95	28.8	23.1	19.4	-11.2	20.3	6.7
SS-SL	.26	.35	.62	8.4	10.2	12.7	34.6	77.1	138.5
OS-SL	1.09	1.34	2.01	35.3	39.2	41.1	22.9	50.0	84.4
SL	1.35	1.70	2.63	43.7	49.7	53.8	25.9	54.7	94.8
SS	.39	.48	.86	12.6	14.0	17.6	23.1	79.2	120.5
OS	1.84	2.01	2.72	59.5	58.8	55.6	9.2	35.3	47.8
Sub-total	2.24	2.49	3.58	72.5	72.8	73.2	11.2	43.8	59.8
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.02	.01	.01	0.6	0.3	0.2	-50.0	0.0	-50.0
OG	.02	.01	.02	0.6	0.3	0.4	-50.0	100.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.01	.00	.01	0.3	0.0	0.2	-100.0	0.0	0.0
SL	.01	.00	.01	0.3	0.0	0.2	-100.0	0.0	0.0
SS	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
OS	.02	.01	.02	0.6	0.3	0.4	-50.0	100.0	0.0
Sub-total	.02	.02	.02	0.6	0.6	0.4	0.0	0.0	0.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.08	.08	.13	2.6	2.3	2.7	0.0	62.5	62.5
OG	.09	.08	.13	2.9	2.3	2.7	-11.1	62.5	44.4
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.14	.10	.16	4.5	2.9	3.3	-28.6	60.0	14.3
SL	.14	.10	.17	4.5	2.9	3.5	-28.6	70.0	21.4
SS	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS	.23	.17	.29	7.4	5.0	5.9	-26.1	70.6	26.1
Sub-total	.23	.18	.29	7.4	5.3	5.9	-21.7	61.1	26.1
TOTAL	2.49	2.68	3.90	80.6	78.4	79.8	7.6	45.5	56.6
Radiology	.22	.21	.22	7.1	6.1	4.5	-4.5	4.8	0.0
Pathology	.18	.30	.45	5.8	8.8	9.2	66.7	50.0	150.0
Anesthesia	.20	.23	.32	6.5	6.7	6.5	15.0	39.1	60.0
GRAND TOTAL	3.09	3.42	4.89	100.0	100.0	100.0	10.7	43.0	58.3

TABLE VI-19

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: WINNIPEG SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.29	2.40	2.46	4.8	2.5	7.4
GS-OG	2.25	2.45	2.64	8.9	7.8	17.3
OG	2.25	2.44	2.59	8.4	6.1	15.1
SS-SL	2.56	2.76	2.52	7.8	-8.7	-1.6
GS-SL	2.73	2.68	2.78	-1.8	3.7	1.8
SL	2.69	2.69	2.71	0.0	0.7	0.7
SS	2.46	2.65	2.50	7.7	-5.7	1.6
GS	2.49	2.59	2.74	4.0	5.8	10.0
Sub-total	2.49	2.60	2.68	4.4	3.1	7.6
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.46	2.77	2.71	12.6	-2.2	10.2
GS-OG	2.08	2.28	2.64	9.6	15.8	26.9
OG	2.10	2.34	2.65	11.4	13.2	26.2
SS-SL	3.06	3.75	2.39	22.5	-36.3	-21.9
GS-SL	3.16	3.18	2.38	0.6	-25.2	-24.7
SL	3.15	3.23	2.38	2.5	-26.3	-24.4
SS	2.57	3.01	2.61	17.1	-13.3	1.6
GS	2.35	2.54	2.56	8.1	0.8	8.9
Sub-total	2.36	2.59	2.57	9.7	-0.8	8.9
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	3.10	2.77	3.04	-10.6	9.7	-1.9
GS-OG	2.73	2.91	3.28	6.6	12.7	20.1
OG	2.74	2.91	3.28	6.2	12.7	19.7
SS-SL	4.02	1.74	4.09	-56.7	135.1	1.7
GS-SL	3.20	3.31	4.26	3.4	28.7	33.1
SL	3.21	3.17	4.26	-1.2	34.4	32.7
SS	3.31	1.81	3.35	-45.3	85.1	1.2
GS	3.04	3.13	3.79	3.0	21.1	24.7
Sub-total	3.04	3.06	3.79	0.7	23.9	24.7
TOTAL	2.55	2.64	2.77	3.5	4.9	8.6
Radiology	1.31	1.24	.04	-5.3	-96.8	-96.9
Pathology	1.73	1.90	2.10	9.8	10.5	21.4
Anesthesia	1.16	1.16	1.16	0.0	0.0	0.0
GRAND TOTAL	2.22	2.28	2.37	2.7	3.9	6.8

contact rate for patients common to Winnipeg solo specialists of the same specialty decreased by 1.6% compared to a small increase of 1.8% for specialists in a different specialty. It appears that it was specialists in group practices who increased the contact rate the most at 15.1% over the ten years.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From Table VI-20 it can be seen that consultations revenue from patients common to Winnipeg solo specialists and other physicians in Winnipeg increased by 41.1% over the ten years. Winnipeg group practitioners increased their consultation rates at a substantially faster rate, 69.2%, compared to 27.5% for Winnipeg solo practitioners. The growth differentials for GPs versus specialists were not vastly different.

It appears that over the ten years physicians in group practices were becoming increasingly important as a source of consultation advice for Winnipeg solo specialists.

WINNIPEG GROUP SPECIALISTS

The per capita number of Winnipeg group specialists fell by 11.0% in the period from 1976/77 to 1981/82, a decrease of 9.3% compared to a decrease of 1.9% in the previous five years. The period of 1971/72 to 1976/77 saw the average gross revenues of Winnipeg group specialists fall due to a decrease in their average patient loads of 15.9%. The fall was tempered somewhat by an increase in the revenue per contact of 5.9% and an increase in the contact rate of 2.9%. From 1976/77 to 1981/82, the trend had reversed itself and average gross revenues adjusted for fee increases went up by 13.5%, mainly due to an increase in average patient load of 16.5%. Dampening this increase in patient load was a drop in the revenue per contact of 1.7% and a drop in the contact rate of 0.9%.

During the period of dropping average patient loads the patient multiplier of the pool of patients served by Winnipeg group specialists remained fairly constant at 2.29 in 1971/72 to 2.33 in 1976/77. However, from 1976/77 to 1981/82 the patient multiplier increased to 2.87 or by

TABLE VI-20

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: WINNIPEG SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	24.01	34.12	41.70	42.1	22.2	73.7
OS-OG	20.18	26.14	32.81	29.5	25.5	62.6
OG	20.74	27.39	35.09	32.1	28.1	69.2
SS-SL	26.34	27.62	35.12	4.9	27.2	33.3
OS-SL	27.27	26.95	34.38	-1.2	27.6	26.1
SL	27.09	27.09	34.55	0.0	27.5	27.5
SS	25.57	29.31	36.98	14.6	26.2	44.6
OS	24.36	26.68	33.97	9.5	27.3	39.4
Sub-total	24.58	27.19	34.69	10.6	27.6	41.1
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	34.26	28.13	40.70	-17.9	44.7	18.8
OS-OG	21.15	22.21	28.89	5.0	30.1	36.6
OG	22.09	23.33	31.59	5.6	35.4	43.0
SS-SL	9.21	44.52	58.91	383.4	32.3	539.6
OS-SL	8.88	18.05	32.44	103.3	79.7	265.3
SL	8.89	21.10	38.77	137.3	83.7	336.1
SS	29.05	31.55	46.38	8.6	47.0	59.7
OS	17.38	20.88	29.95	20.1	43.4	72.3
Sub-total	18.12	22.65	33.76	25.0	49.1	86.3
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	16.86	25.86	38.16	53.4	47.6	126.3
OS-OG	5.01	5.88	9.28	17.4	57.8	85.2
OG	5.31	6.11	9.67	15.1	58.3	82.1
SS-SL	12.05	3.26	44.91	-72.9	277.6	272.7
OS-SL	1.05	2.91	4.51	177.1	55.0	329.5
SL	1.11	2.93	4.87	164.0	66.2	338.7
SS	15.64	6.98	41.25	-55.4	491.0	163.7
OS	2.50	4.21	6.58	68.4	56.3	163.2
Sub-total	2.67	4.30	6.95	61.0	61.6	160.3
TOTAL	22.49	25.62	32.60	13.9	27.2	45.0
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	3.84	2.31	1.84	-39.8	-20.3	-52.1
Anesthesia	4.86	16.64	28.99	242.4	74.2	496.5
GRAND TOTAL	18.16	20.11	25.99	10.7	29.2	43.1

23.17%. This coincides with the increase in the average patient load of Winnipeg group specialists.

From Table VI-21 it can be seen that the increased patient commonality of patients did not take place within group practices, in fact patient commonality dropped in group practices from 24.7% of common patients in 1971/72 to 14.4% in 1981/82. It appears that specialists in group practice did not increase informal referrals of patients within the group practice in order to increase their average patient loads.

Increased patient commonality between Winnipeg group specialists occurred mainly between them and Winnipeg solo specialists in the same specialty, as well as with specialists in group practices who were in the same specialty. Patient multipliers increased by 190.9% and 71.4% respectively in the ten years. Again these large increases occurred in the last five years at 146.2% and 100.0% respectively.

As well, Winnipeg group specialists did not increase their patient commonality with rural physicians or those in Brandon.

It appears that Winnipeg group specialists reversed a drop in their average gross revenues adjusted for fee increases by increasing their average patient loads through the process of increased patient commonality with other specialists of the same specialty, whether they were solo practitioners or in group practice. They did not, however, increase the patient commonality within their own group practices.

REVENUE MULTIPLIERS

From Table VI-22 it can be seen that revenue multipliers for patients common to Winnipeg group specialists and other physicians in the same group decreased by 18.3% over the ten years. However, the decreases occurred in the first five years which also coincides with a decrease in the average gross revenues for Winnipeg group specialists of 8.3% after adjusting for fee schedule increases. However, this trend in average revenues was reversed from 1976/77 to 1981/82 to an increase of 13.5%. At the same time the revenue multiplier for Winnipeg group specialists in the same group practices increased by 40.0%.

TABLE VI-21

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: WINNIPEG GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.22	.15	.18	6.0	3.6	3.9	-31.8	20.0	-18.2
OS-SG	.69	.52	.49	18.8	12.5	10.5	-24.6	-5.8	-29.0
SG	.91	.67	.67	24.7	16.1	14.4	-26.4	0.0	-26.4
SS-OG	.07	.06	.12	1.9	1.4	2.6	-14.3	100.0	71.4
OS-OG	.53	.53	.54	14.4	12.8	11.6	0.0	1.9	1.9
OG	.60	.59	.67	16.3	14.2	14.4	-1.7	13.6	11.7
SS-SL	.11	.13	.32	3.0	3.1	6.9	18.2	146.2	190.9
OS-SL	.67	.94	1.21	18.2	22.7	26.0	40.3	28.7	80.6
SL	.78	1.08	1.53	21.2	26.0	32.8	38.5	41.7	96.2
SS	.40	.34	.63	10.9	8.2	13.5	-15.0	85.3	57.5
OS	1.90	1.99	2.25	51.6	48.0	48.3	4.7	13.1	18.4
Sub-total	2.29	2.33	2.87	62.2	56.1	61.6	1.7	23.2	25.3
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.01	.01	.01	0.3	0.2	0.2	0.0	0.0	0.0
OG	.01	.01	.01	0.3	0.2	0.2	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS	.01	.01	.01	0.3	0.2	0.2	0.0	0.0	0.0
Sub-total	.01	.01	.02	0.3	0.2	0.4	0.0	100.0	100.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.10	.10	.11	2.7	2.4	2.4	0.0	10.0	10.0
OG	.10	.10	.11	2.7	2.4	2.4	0.0	10.0	10.0
SS-SL	.00	.01	.00	0.0	0.2	0.0	0.0	-100.0	0.0
OS-SL	.14	.13	.13	3.8	3.1	2.8	-7.1	0.0	-7.1
SL	.14	.14	.13	3.8	3.4	2.8	0.0	-7.1	-7.1
SS	.00	.01	.00	0.0	0.2	0.0	0.0	-100.0	0.0
OS	.24	.22	.24	6.5	5.3	5.2	-8.3	9.1	0.0
Sub-total	.24	.24	.24	6.5	5.8	5.2	0.0	0.0	0.0
TOTAL	2.55	2.58	3.13	69.3	62.2	67.2	1.2	21.3	22.7
Radiology	.35	.61	.50	14.9	14.7	10.7	10.9	-18.0	-9.1
Pathology	.41	.79	.90	11.1	19.0	19.3	92.7	13.9	119.5
Anesthesia	.17	.17	.14	4.6	4.1	3.0	0.0	-17.6	-17.6
GRAND TOTAL	3.68	4.15	4.66	100.0	100.0	100.0	12.8	12.3	26.6

TABLE VI-22

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: WINNIPEG GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.23	.15	.21	7.0	4.4	4.4	-34.8	40.0	-8.7
OS-SG	.70	.53	.55	21.2	15.5	11.6	-24.3	3.8	-21.4
SG	.93	.68	.76	28.2	19.9	16.0	-26.9	11.8	-18.3
SS-OG	.07	.06	.13	2.1	1.8	2.7	-14.3	116.7	85.7
OS-OG	.46	.48	.62	13.9	14.1	13.1	4.3	29.2	34.8
OG	.53	.54	.75	16.1	15.8	15.8	1.9	38.9	41.5
SS-SL	.12	.15	.30	3.6	4.4	6.3	25.0	100.0	150.0
OS-SL	.78	.95	1.55	23.6	27.9	32.6	21.8	63.2	98.7
SL	.90	1.10	1.84	27.3	32.3	38.7	22.2	67.3	104.4
SS	.41	.36	.64	12.4	10.6	13.5	-12.2	77.8	56.1
OS	1.95	1.96	2.72	59.1	57.5	57.3	0.5	38.8	39.5
Sub-total	2.36	2.32	3.36	71.5	68.0	70.7	-1.7	44.8	42.4
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.01	.01	.01	0.3	0.3	0.2	0.0	0.0	0.0
OG	.01	.01	.01	0.3	0.3	0.2	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.01	0.0	0.0	0.2	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS	.01	.01	.01	0.3	0.3	0.2	0.0	0.0	0.0
Sub-total	.02	.01	.02	0.6	0.3	0.4	-50.0	100.0	0.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.09	.08	.10	2.7	2.3	2.1	-11.1	25.0	11.1
OG	.09	.08	.10	2.7	2.3	2.1	-11.1	25.0	11.1
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.13	.12	.16	3.9	3.5	3.4	-7.7	33.3	23.1
SL	.13	.12	.16	3.9	3.5	3.4	-7.7	33.3	23.1
SS	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS	.22	.20	.26	6.7	5.9	5.5	-9.1	30.0	18.2
Sub-total	.23	.21	.26	7.0	6.2	5.5	-8.7	23.8	13.0
TOTAL	2.60	2.55	3.63	78.8	74.8	76.4	-1.9	42.4	39.6
Radiology	.31	.28	.31	9.4	8.2	6.5	-9.7	10.7	0.0
Pathology	.20	.39	.59	6.1	11.4	12.4	95.0	51.3	195.0
Anesthesia	.19	.19	.22	5.8	5.6	4.6	0.0	15.8	15.8
GRAND TOTAL	3.30	3.41	4.75	100.0	100.0	100.0	3.3	39.3	43.9

A large increase in the revenue multiplier also took place in Winnipeg group practices with physicians of the same specialty, an increase of 85.7% over ten years. A smaller increase of 34.8% occurred with specialists in other specialties in the same group practices.

Winnipeg solo specialists in the same specialty increased their revenue multipliers by 150.0% over ten years compared to 98.7% for specialists in other specialties.

Winnipeg group specialists decreased their revenue multipliers over the ten years on their common patients, whereas solo practitioners substantially increased their revenue multipliers, followed by group practitioners who increased their revenue multipliers, but at half the rate of solo practitioners.

COMMON PATIENTS' CONTACT RATE

In terms of the common patients' contact rate it can be seen in Table VI-23 that the contact rate of patients common to Winnipeg group specialists increased the most with physicians in other group practices at 24.5% over ten years compared to 7.8% within the same group practice. The contact rate with solo practitioners declined a small amount by 0.4% during the same timeframe.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From Table VI-24 it can be seen that consultation revenue as a percentage of gross revenue increased by 48.3% over ten years for physicians in Winnipeg who had patients in common with Winnipeg group specialists. Consultations as a percentage of revenues increased the most in other group practices, 73.8%, compared to the increases within the same group practice, 64.28%, and compared to solo practitioners, 24.4%. The major increases within the solo and group practices have been with specialists in the same specialty.

It appears that Winnipeg group specialists have been increasing their gross revenues through increased consultations and have done so not only by increasing consultations amongst their own group's patients, but with patients that they have in common with other Winnipeg group specialists in the same specialty.

TABLE VI-23

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: WINNIPEG GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	2.58	2.59	2.68	0.4	3.5	3.9
OS-SG	2.30	2.40	2.48	4.3	3.3	7.8
SG	2.37	2.45	2.53	3.4	3.3	6.8
SS-OG	2.02	2.02	2.25	0.0	11.4	11.4
OS-OG	2.16	2.38	2.69	10.2	13.0	24.5
OG	2.14	2.35	2.61	9.8	11.1	22.0
SS-SL	2.34	2.25	2.15	-3.8	-4.4	-8.1
OS-SL	2.62	2.54	2.68	-3.1	5.5	2.3
SL	2.58	2.51	2.57	-2.7	2.4	-0.4
SS	2.41	2.36	2.32	-2.1	-1.7	-3.7
OS	2.37	2.46	2.63	3.8	6.9	11.0
Sub-total	2.38	2.45	2.57	2.9	4.9	8.0
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.85	2.39	2.64	-16.1	10.5	-7.4
OS-OG	2.13	2.17	2.39	1.9	10.1	12.2
OG	2.24	2.20	2.43	-1.8	10.5	8.5
SS-SL	3.14	5.07	2.14	61.5	-57.8	-31.8
OS-SL	3.47	2.75	2.40	-20.7	-12.7	-30.8
SL	3.44	2.91	2.35	-15.4	-19.2	-31.7
SS	2.90	2.88	2.45	-0.7	-14.9	-15.5
OS	2.48	2.35	2.39	-5.2	1.7	-3.6
Sub-total	2.54	2.40	2.40	-5.5	0.0	-5.5
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.79	2.81	2.86	0.7	1.8	2.5
OS-OG	2.97	2.97	3.06	0.0	3.0	3.0
OG	2.97	2.97	3.06	0.0	3.0	3.0
SS-SL	3.72	1.70	3.06	-54.3	80.0	-17.7
OS-SL	3.26	3.71	4.23	13.8	14.0	29.8
SL	3.26	3.55	4.22	8.9	18.9	29.4
SS	2.98	1.83	2.91	-38.6	59.0	-2.3
OS	3.14	3.38	3.70	7.6	9.5	17.8
Sub-total	3.14	3.30	3.69	5.1	11.8	17.5
TOTAL	2.45	2.53	2.65	3.3	4.7	8.2
Radiology	1.36	1.19	.02	-12.5	-98.3	-98.5
Pathology	1.87	2.16	2.18	15.5	0.9	16.6
Anesthesia	1.11	1.10	1.11	-0.9	0.9	0.0
GRAND TOTAL	2.16	2.20	2.23	1.9	1.4	3.2

TABLE VI-24

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: WINNIPEG GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	15.52	23.03	30.04	48.4	30.4	93.6
OS-SG	23.32	31.45	37.19	34.9	18.3	59.5
SG	21.42	29.55	35.19	38.0	19.1	64.3
SS-OG	22.55	36.60	49.22	62.3	34.5	118.3
OS-OG	17.27	22.55	27.45	30.6	21.7	58.9
OG	17.94	24.13	31.18	34.5	29.2	73.8
SS-SL	28.53	35.83	41.41	25.6	15.6	45.1
OS-SL	23.92	22.41	29.75	-6.3	32.8	24.4
SL	24.53	24.18	31.64	-1.4	30.9	29.0
SS	20.43	30.49	39.20	49.2	28.6	91.9
OS	22.11	24.88	30.73	12.5	23.5	39.0
Sub-total	21.82	25.75	32.35	18.0	25.6	48.3
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	28.65	23.09	43.60	-19.4	88.8	52.2
OS-OG	23.69	26.48	26.43	11.8	-0.2	11.6
OG	24.77	25.94	30.01	4.7	15.7	21.2
SS-SL	13.20	18.48	50.21	40.0	171.7	280.4
OS-SL	9.60	16.82	28.29	75.2	68.2	194.7
SL	10.09	17.02	33.28	68.7	95.5	229.8
SS	25.35	21.93	46.11	-13.5	110.3	81.9
OS	19.05	23.41	27.09	22.9	15.7	42.2
Sub-total	20.27	23.19	31.19	14.4	34.5	53.9
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	20.76	20.44	38.66	-1.5	89.1	86.2
OS-OG	3.95	5.73	9.82	45.1	71.4	148.6
OG	4.21	5.97	10.25	41.8	71.7	143.5
SS-SL	11.35	4.34	56.24	-61.8	195.9	395.5
OS-SL	1.27	3.16	4.68	148.8	48.1	268.5
SL	1.30	3.20	4.93	146.2	54.1	279.2
SS	18.46	8.35	44.58	-54.8	433.9	141.5
OS	2.35	4.20	6.68	78.7	59.0	184.3
Sub-total	2.49	4.31	7.01	73.1	62.6	181.5
TOTAL	20.13	23.99	30.52	19.2	27.2	51.6
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	3.78	3.36	1.77	-11.1	-47.3	-53.2
Anesthesia	3.86	7.90	18.94	104.7	139.7	390.7
GRAND TOTAL	15.86	17.92	23.35	13.0	30.3	47.2

VI-3-3 BRANDON COMMONALTY DATA

Over the ten year period from 1971/72 to 1981/82 the number of physicians per capita in Brandon grew by 3.1%, but unlike the steady upward growth in Winnipeg, it was positive in the first five years with an increase in the ratio of physicians per capita of 13.1% followed by a drop in the last five years of 8.8% which resulted in a net gain of 3.1% over ten years.

BRANDON SOLO GENERAL PRACTICE

As previously seen in Table VI-5, during the first five years there was a 25.0% increase in the number of Brandon solo GPs per capita. After adjusting for fee schedule increases, the average gross revenues of Brandon solo GPs increased by 37.0% due to a significant increase in their average patient load of 59.9%, dampened by a slight decrease in revenues per contact of 0.4%, and a decrease of 14.0% in the patient contact rate.

In the last five years there was a drop in Brandon solo GPs per capita of 31.2%, resulting in a net drop over the ten years of 14.0%. Average gross revenues adjusted for fee schedule increases grew by 8.8%, mainly due to an increase in the contact rate per patient of 36.6%, coupled with a decrease in revenues per contact of 17.1%, and a drop in average patient load of 3.9%.

Over the ten years, therefore, average gross revenues adjusted for fee schedule increases grew by 49.1%. The average number of contacts per patient grew by 17.4%, but were essentially cancelled by a similar drop in the average revenue per patient. This shift in the source of revenues was accompanied with an increase in the average patient load of Brandon solo GPs of 53.7%.

PATIENT MULTIPLIERS

Perusal of Table VI-25 shows that patient multipliers, that is the extent to which increasing average patient loads are due to increased commonality of patients, have increased over the ten years by 168.3% for those patients that Brandon solo GPs have in common with other physicians

TABLE VI-25

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: BRANDON SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.02	.02	0.8	0.8	0.6	0.0	0.0	0.0
OS-OG	.10	.05	.04	4.2	1.9	1.2	-50.0	-20.0	-60.0
OG	.12	.07	.06	5.0	2.7	1.8	-41.7	-14.3	-50.0
SS-SL	.04	.05	.05	1.7	1.9	1.5	25.0	0.0	25.0
OS-SL	.16	.07	.08	6.7	2.7	2.4	-56.3	14.3	-50.0
SL	.19	.12	.13	8.0	4.5	3.9	-36.8	8.3	-31.6
SS	.06	.07	.07	2.5	2.7	2.1	16.7	0.0	16.7
OS	.26	.12	.12	10.9	4.5	3.6	-53.8	0.0	-53.8
Sub-total	.32	.19	.19	13.4	7.2	5.8	-40.6	0.0	-40.6
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.16	.35	.52	6.7	13.3	15.8	118.8	48.6	225.0
OS-OG	.19	.30	.35	8.0	11.4	10.6	57.9	16.7	84.2
OG	.36	.65	.87	15.1	24.6	26.4	80.6	33.8	141.7
SS-SL	.04	.19	.27	1.7	7.2	8.2	375.0	42.1	575.0
OS-SL	.20	.24	.46	8.4	9.1	13.9	20.0	91.7	130.0
SL	.24	.43	.74	10.1	16.3	22.4	79.2	72.1	208.3
SS	.20	.54	.80	8.4	20.5	24.2	170.0	48.1	300.0
OS	.40	.54	.82	16.8	20.5	24.8	35.0	51.9	105.0
Sub-total	.60	1.08	1.61	25.2	40.9	48.8	80.0	49.1	168.3
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.14	.11	.08	5.9	4.2	2.4	-21.4	-27.3	-42.9
OS-OG	.01	.00	.00	0.4	0.0	0.0	-100.0	0.0	-100.0
OG	.15	.12	.08	6.3	4.5	2.4	-20.0	-33.3	-46.7
SS-SL	.42	.37	.26	17.6	14.0	7.9	-11.9	-29.7	-38.1
OS-SL	.00	.02	.01	0.0	0.8	0.3	0.0	-50.0	0.0
SL	.42	.39	.26	17.6	14.8	7.9	-7.1	-33.3	-38.1
SS	.55	.48	.34	23.1	18.2	10.3	-12.7	-29.2	-38.2
OS	.01	.02	.01	0.4	0.8	0.3	100.0	-50.0	0.0
Sub-total	.57	.50	.35	23.9	18.9	10.6	-12.3	-30.0	-38.6
TOTAL	1.48	1.77	2.15	62.2	67.0	65.2	19.6	21.5	45.3
Radiology	.37	.31	.39	15.5	11.7	11.8	-16.2	25.8	5.4
Pathology	.42	.46	.66	17.6	17.4	20.0	9.5	43.5	57.1
Anesthesia	.10	.09	.11	4.2	3.4	3.3	-10.0	22.2	10.0
GRAND TOTAL	2.38	2.64	3.30	100.0	100.0	100.0	10.9	25.0	38.7

practicing in Brandon. In other words, in 1971/72 a single Brandon solo GP's patient became an additional 0.60 patients in the practices of other physicians in Brandon. By 1976/77 the patient multiplier was 1.08 additional patients or an increase of 80.0%, and by 1981/82 it was 1.61 additional patients, an increase of 49.0% for an increase over ten years of 168.3%.

A major source of patients for Brandon solo GPs was increased commonality of patients among Brandon solo GPs. An increase from 0.04 additional patients in 1971/72 to 0.27 additional patients by 1981/82, an increase of 575.0%, of which 375% occurred in the first five years and 42.1% in the last five years.

Commonality of patients also increased between Brandon solo GPs and Brandon group GPs. In 1971/72 patients common between these physicians became an additional 0.16 patients. By 1976/77 they became an additional 0.35 patients, an increase of 118.8%, and by 1981/82 an additional 0.52 patients or an increase of 48.6% over 1976/77. This represents an increase of 225.0% over a ten year period. Therefore, over a ten year period GPs in Brandon increased average patient loads by increasing the number of patients they had in common with other GPs in Brandon by 300.0%.

The commonality of patients did not grow at quite the same pace with specialists in Brandon, an increase of 208.3% over ten years. Of this increase, 130.0% was increased commonality with the patients of solo specialists and 84.2% was with group specialists in Brandon.

Commonality of patients with physicians practicing in rural Manitoba and in Winnipeg decreased by 40.6% with patients of Winnipeg physicians, and by 38.6% with physicians of rural Manitoba. It is evident that the increased patient loads and average gross revenues of Brandon solo GPs did not occur due to serving more patients from rural Manitoba, but by an increased commonality of patients with other physicians in Brandon.

REVENUE MULTIPLIERS

As previously defined, the concept of revenue multiplier is the additional revenue that is generated by physicians due to an increased commonality of patients. From Table VI-26 it can be seen that for every dollar of revenue generated by a Brandon solo GP in 1971/72, an additional $0.06 was generated by other Brandon solo GPs. This had increased to $0.24 by 1976/77, an increase of 300.0%, and to $0.31 by 1981/82, an increase of 29.2% over 1976/77. Over ten years this represents an increase of 416.7% in the revenue multiplier of patients that were common to Brandon solo GPs.

Brandon GPs in group practice, however, only increased their revenue multiplier on patients they had in common with Brandon solo GPs by 200.0% over the ten years. Most of the increase of 123.1% occurred in the first five years and 34.5% occurred in the last five years.

Brandon group specialists increased their revenue multiplier by 165.2% over ten years, and Brandon solo specialists by 292.0%.

Overall, Brandon physicians, including Brandon solo GPs with patients in common with Brandon solo GPs, increased the revenue multiplier on the common base of patients by some 225.0% over ten years.

The revenue multipliers of physicians outside Brandon with patients in common with Brandon solo GPs decreased over the ten years. This, combined with the decreased commonality of patients, indicates that over the ten years patients of Brandon solo GPs were receiving an increasing proportion of their medical care from Brandon physicians.

COMMON PATIENTS' CONTACT RATE

Now, if one examines Table VI-27 it can be seen that the contact rate of those patients that Brandon solo GPs had in common with one another went from 3.58 contacts per patient in 1971/72 to 3.89 in 1981/82, an increase of 8.7%.

The contact rate per patient increased the most for patients common to Brandon solo specialists, an increase of 36.1% over ten years, followed by Brandon group GPs, an increase of 32.4%, and then by Brandon solo specialists, an increase of 24.1%.

Over the ten years physicians in Brandon, including Brandon solo GPs with patients in common with Brandon solo GPs, increased the contact rate on this pool of common patients from 1.94 in 1971/72 to 2.52 in 1981/82,

TABLE VI-26

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: BRANDON SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.01	.02	0.5	0.4	0.6	0.0	100.0	100.0
OS-OG	.14	.07	.05	6.7	2.8	1.6	-50.0	-28.6	-64.3
OG	.15	.09	.07	7.2	3.6	2.2	-40.0	-22.2	-53.3
SS-SL	.03	.04	.03	1.4	1.6	0.9	33.3	-25.0	0.0
OS-SL	.35	.12	.12	16.7	4.8	3.8	-65.7	0.0	-65.7
SL	.38	.16	.15	18.2	6.4	4.7	-57.9	-6.3	-60.5
SS	.04	.05	.06	1.9	2.0	1.9	25.0	20.0	50.0
OS	.49	.20	.17	23.4	8.0	5.4	-59.2	-15.0	-65.3
Sub-total	.53	.25	.23	25.4	10.0	7.3	-52.8	-8.0	-56.6
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.13	.29	.39	6.2	11.6	12.3	123.1	34.5	200.0
OS-OG	.23	.43	.61	11.0	17.1	19.2	87.0	41.9	165.2
OG	.37	.73	1.00	17.7	29.1	31.5	97.3	37.0	170.3
SS-SL	.06	.24	.31	2.9	9.6	9.8	300.0	29.2	416.7
OS-SL	.13	.24	.51	6.2	9.6	16.1	84.6	112.5	292.3
SL	.19	.47	.82	9.1	18.7	25.9	147.4	74.5	331.6
SS	.19	.53	.70	9.1	21.1	22.1	178.9	32.1	268.4
OS	.37	.67	1.12	17.7	26.7	35.3	81.1	67.2	202.7
Sub-total	.56	1.20	1.82	26.8	47.8	57.4	114.3	51.7	225.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.12	.11	.09	5.7	4.4	2.8	-8.3	-18.2	-25.0
OS-OG	.01	.00	.00	0.5	0.0	0.0	-100.0	0.0	-100.0
OG	.13	.11	.10	6.2	4.4	3.2	-15.4	-9.1	-23.1
SS-SL	.39	.40	.30	18.7	16.0	9.5	2.6	-25.0	-23.1
OS-SL	.01	.03	.01	0.5	1.2	0.3	200.0	-66.7	0.0
SL	.39	.43	.32	18.7	17.1	10.1	10.3	-25.6	-17.9
SS	.51	.51	.39	24.4	20.3	12.3	0.0	-23.5	-23.5
OS	.01	.04	.02	0.5	1.6	0.6	300.0	-50.0	100.0
Sub-total	.52	.54	.41	24.9	21.5	12.9	3.8	-24.1	-21.2
TOTAL	1.61	1.99	2.45	77.0	79.3	77.3	23.6	23.1	52.2
Radiology	.17	.16	.20	8.1	6.4	6.3	-5.9	25.0	17.6
Pathology	.20	.23	.36	9.6	9.2	11.4	15.0	56.5	80.0
Anesthesia	.12	.13	.15	5.7	5.2	4.7	8.3	15.4	25.0
GRAND TOTAL	2.09	2.51	3.17	100.0	100.0	100.0	20.1	26.3	51.7

TABLE VI-27

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: BRANDON SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.16	1.94	3.92	-10.2	102.1	81.5
GS-OG	1.74	1.69	1.70	-2.9	0.6	-2.3
OG	1.81	1.76	2.38	-2.8	35.2	31.5
SS-SL	2.45	2.40	2.34	-2.0	-2.5	-4.5
GS-SL	2.47	1.63	1.79	-34.0	9.8	-27.5
SL	2.46	1.96	2.01	-20.3	2.6	-18.3
SS	2.35	2.27	2.76	-3.4	21.6	17.4
GS	2.17	1.66	1.76	-23.5	6.0	-18.9
Sub-total	2.20	1.88	2.13	-14.5	13.3	-3.2
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.79	2.10	2.37	17.3	12.9	32.4
GS-OG	1.91	2.01	2.18	5.2	8.5	14.1
OG	1.86	2.06	2.29	10.8	11.2	23.1
SS-SL	3.56	3.56	3.87	0.0	8.7	8.7
GS-SL	1.74	2.23	2.16	28.2	-3.1	24.1
SL	2.05	2.81	2.79	37.1	-0.7	36.1
SS	2.16	2.60	2.88	20.4	10.8	33.3
GS	1.82	2.11	2.17	15.9	2.8	19.2
Sub-total	1.94	2.35	2.52	21.1	7.2	29.9
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.84	3.11	4.92	9.5	58.2	73.2
GS-OG	2.94	2.71	2.04	-7.8	-24.7	-30.6
OG	2.85	3.10	4.78	8.8	54.2	67.7
SS-SL	3.44	3.72	5.00	8.1	34.4	45.3
GS-SL	3.64	4.31	5.67	18.4	31.6	55.8
SL	3.44	3.75	5.01	9.0	33.6	45.6
SS	3.29	3.58	4.98	8.8	39.1	51.4
GS	3.14	4.14	4.39	31.8	6.0	39.8
Sub-total	3.29	3.60	4.96	9.4	37.8	50.8
TOTAL	2.51	2.66	2.88	6.0	8.3	14.7
Radiology	1.27	1.30	0.00	2.4	-100.0	-100.0
Pathology	1.68	2.01	2.12	19.6	5.5	26.2
Anesthesia	1.09	1.09	1.06	0.0	-2.8	-2.8
GRAND TOTAL	2.11	2.33	2.33	10.4	0.0	10.4

an increase of 29.9%. Most of the increase, 21.1%, took place in the first five years, and only 7.2% took place in the last five years. However, rural physicians who had patients in common with Brandon solo GPs saw an increase in the contact rate of 50.8% over ten years. Not only did the commonality of patients increase, but the contact rate of common patients increased as well.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

The percentage of revenues that were derived from common patients that were due to consultations, diminished from 18.7% of common patient revenues in 1971/72, to 14.7% in 1981/82 for patients common to Brandon solo GPs, a decrease of 21.3%.

However, for Brandon solo specialists, consultation revenue from common patients became increasingly important over the ten years, growing by 69.8%, as can be seen in Table VI-28.

Brandon GPs in group practice, however, saw consultation revenue derived from common patients decrease by 50.5% over ten years, from 21.5% to 10.6%.

Brandon group specialists, on the other hand, increased consultation revenue from common patients from 41.0% in 1971/72 to 51.0% of common revenue in 1981/82, an increase of 24.4%.

This is consistent with the increase in the relative number of specialists compared to GPs in Brandon over the ten years.

BRANDON GROUP GENERAL PRACTICE

The per capita number of Brandon group GPs fell by 2.6% from 1971/72 to 1981/82, as previously seen in Table VI-5. As in the case of solo GPs, the drop occurred in the last five years which overshadowed an increase in the ratio of 13.1% in the first five years. Group GPs in Brandon increased their average gross revenues, adjusted for fee schedule increases, by 29.3% over ten years (see Table VI-5).

The pattern of increase was about the same as for solo GPs in that an increase in the contact rate of 20.9% was coupled with a decrease in the average revenue per contact of 17.8%. Average patient load, however,

TABLE VI-28

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: BRANDON SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	5.05	4.95	.20	-2.0	-96.0	-96.0
OS-OG	49.13	49.67	52.41	1.1	5.5	6.7
OG	45.76	43.04	35.80	-5.9	-16.8	-21.8
SS-SL	.75	3.01	4.95	301.3	64.5	560.0
OS-SL	45.45	48.13	46.76	5.9	-2.8	2.9
SL	41.84	37.93	37.10	-9.3	-2.2	-11.3
SS	1.94	3.52	3.04	81.4	-13.6	56.7
OS	46.51	48.71	48.47	4.7	-0.5	4.2
Sub-total	42.97	39.74	36.67	-7.5	-7.7	-14.7
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	21.45	14.95	10.61	-30.3	-29.0	-50.5
OS-OG	40.97	41.37	50.96	1.0	23.2	24.4
OG	33.85	30.76	35.14	-9.1	14.2	3.8
SS-SL	18.68	13.06	14.70	-30.1	12.6	-21.3
OS-SL	21.57	31.34	36.63	45.3	16.9	69.8
SL	20.69	22.22	28.40	7.4	27.8	37.3
SS	20.62	14.10	12.41	-31.6	-12.0	-39.8
OS	34.03	37.82	44.41	11.1	17.4	30.5
Sub-total	29.41	27.39	32.10	-6.9	17.2	9.1
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	3.78	1.34	2.21	-64.6	64.9	-41.5
OS-OG	33.35	25.89	73.87	-22.4	185.3	121.5
OG	5.92	2.30	5.83	-61.1	153.5	-1.5
SS-SL	.68	2.38	1.21	250.0	-49.2	77.9
OS-SL	17.77	27.07	25.36	52.3	-6.3	42.7
SL	.90	4.21	2.14	367.8	-49.2	137.8
SS	1.40	2.16	1.44	54.3	-33.3	2.9
OS	27.77	26.93	39.16	-3.0	45.4	41.0
Sub-total	2.12	3.82	3.00	80.2	-21.5	41.5
TOTAL	25.01	22.49	27.63	-10.1	22.9	10.5
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	.97	1.18	.04	21.6	-96.6	-95.9
Anesthesia	.24	7.46	1.78	8.3	-76.1	641.7
GRAND TOTAL	19.19	17.86	21.41	-6.9	19.9	11.6

increased during these ten years by 30.1% versus 53.7% for solo GPs. However, group GPs still had an average patient load that was 20.0% greater than for solo GPs.

In the first five years, increases in the per capita number of group GPs, 13.1%, was coupled with a drop in average gross revenues by 7.6%. However, in the last five years a drop in their per capita numbers of 13.8% was associated with an increase in average revenues of 39.9%. Again, contacts per patient increased but revenue per contact dropped, leaving revenue per patient adjusted for fee increases essentially intact over the ten years.

From 1971/72 to 1976/77 it appears that the net per capita increase in group GPs resulted in a decrease in average gross revenues per group GP mainly, due to a drop in their average patient load. Decreases in revenue per contact were compensated by an increase in the contact rate which left the revenue per patient intact.

From 1976/77 to 1981/82, a decrease in the net per capita group GPs allowed group GPs to increase their average revenues by 39.9% mainly by increasing their average patient loads by 40.4%. Again, an increase in the contact rate with a similar decrease in the revenue per contact left the revenue per patient essentially unchanged.

PATIENT MULTIPLIERS

During these ten years Brandon group GPs increased average patient loads by some 30.1%. From Table VI-29 it can be seen that in 1981/82 the pool of patients that were also patients of Brandon group GPs generated a patient multiplier of 1.92 as patients of other physicians in Brandon. Each Brandon group GP patient was the equivalent of 1.92 patients because they were also the patients of other physicians in Brandon.

From 1971/72 to 1976/77 the patient multiplier for Brandon group GPs with other GPs in their own group practice decreased by 19.8%, from 0.86 to 0.80. However, from 1971/72 to 1976/77, the patient multiplier increased by 15.9% for an overall decrease over the ten years of 6.97%.

However, from 1971/72 to 1976/77, the patient multiplier of specialists in the same group practice increased by 31.0%, with an

TABLE VI-29

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: BRANDON GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.02	.02	0.8	0.7	0.6	0.0	0.0	0.0
OS-OG	.05	.04	.04	2.0	1.3	1.2	-20.0	0.0	-20.0
OG	.07	.06	.06	2.8	2.0	1.8	-14.3	0.0	-14.3
SS-SL	.02	.04	.08	0.8	1.3	2.4	100.0	100.0	300.0
OS-SL	.10	.06	.07	4.0	2.0	2.1	-40.0	16.7	-30.0
SL	.12	.10	.15	4.7	3.3	4.5	-16.7	50.0	25.0
SS	.03	.06	.10	1.2	2.0	3.0	100.0	66.7	233.3
OS	.15	.10	.11	5.9	3.3	3.3	-33.3	10.0	-26.7
Sub-total	.19	.16	.21	7.5	5.4	6.4	-15.8	31.3	10.5
BRANDON:									
SS-SG	.86	.69	.80	34.0	23.1	24.2	-19.8	15.9	-7.0
OS-SG	.29	.38	.42	11.5	12.7	12.7	31.0	10.5	44.8
SG	1.14	1.07	1.22	45.1	35.8	37.0	-6.1	14.0	7.0
SS-OG	.17	.12	.15	6.7	4.0	4.5	-29.4	25.0	-11.8
OS-OG	.21	.18	.15	8.3	6.0	4.5	-14.3	-16.7	-28.6
OG	.38	.31	.30	15.0	10.4	9.1	-18.4	-3.2	-21.1
SS-SL	.04	.16	.13	1.6	5.4	3.9	300.0	-18.8	225.0
OS-SL	.06	.12	.27	2.4	4.0	8.2	100.0	125.0	350.0
SL	.09	.28	.40	3.6	9.4	12.1	211.1	42.9	344.4
SS	1.06	.97	1.08	41.9	32.4	32.7	-8.5	11.3	1.9
OS	.55	.68	.85	21.7	22.7	25.8	23.6	25.0	54.5
Sub-total	1.61	1.65	1.92	63.6	55.2	58.2	2.5	16.4	19.3
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.07	.06	.07	2.8	2.0	2.1	-14.3	16.7	0.0
OS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OG	.07	.06	.07	2.8	2.0	2.1	-14.3	16.7	0.0
SS-SL	.22	.24	.20	8.7	8.0	6.1	9.1	-16.7	9.1
OS-SL	.00	.01	.01	0.0	0.3	0.3	0.0	0.0	0.0
SL	.22	.25	.20	8.7	8.4	6.1	13.6	-20.0	-9.1
SS	.29	.30	.26	11.5	10.0	7.9	3.4	-13.3	-10.3
OS	.01	.01	.01	0.4	0.3	0.3	0.0	0.0	0.0
Sub-total	.29	.31	.27	11.5	10.4	8.2	6.9	-12.9	-6.9
TOTAL	2.09	2.13	2.40	82.6	71.2	72.7	1.9	12.7	14.8
Radiology	.11	.21	.21	4.3	7.0	6.4	90.9	0.0	90.9
Pathology	.20	.53	.57	7.9	17.7	17.3	165.0	7.5	185.0
Anesthesia	.13	.12	.12	5.1	4.0	3.6	-7.7	0.0	-7.7
GRAND TOTAL	2.53	2.99	3.30	100.0	100.0	100.0	18.2	10.4	30.4

additional increase of 10.5% in the next five years, for a ten year increase of 44.8%.

It appears that Brandon group GPs did not significantly increase average patient loads by increasing the degree of patient commonality within their own group practices.

The degree of patient commonality between Brandon group GPs and other physicians in group practices decreased by some 21.0% over the ten years, from 0.38 to 0.30 additional patients.

A large surge in patient commonality took place between Brandon group GPs and Brandon solo practitioners, from 0.09 additional patients in 1971/72 to 0.40 in 1981/82, an increase of 344.4%.

Over these ten years the commonality of patients between Brandon group GPs and Winnipeg physicians increased from 0.19 to 0.21, an increase of 10.5%. On the other hand, patient commonality with rural physicians decreased by 6.9%.

It appears that Brandon group GPs increased average revenues by increasing average patient loads through increased commonality of patients (see Table VI-25) with solo practitioners in Brandon, be they GPs or specialists.

REVENUE MULTIPLIERS

From Table VI-30 it can be seen that patients common to Brandon group GPs with specialists in the same group were an increasing source of revenues over the ten years, with the revenue multiplier increasing from $0.55 per patient in 1971/72 to $1.18 in 1981/82.

The revenue multipliers of physicians with other group practices decreased by 11.8% indicating that patient commonality with Brandon group GPs in other groups was not an increasing source of revenue over the ten years.

It appears, however, that patient commonality between Brandon solo GPs and Brandon group GPs was an increasing source of revenues with increases of 150.0% by Brandon solo GPs and increases of 412.5% by Brandon solo specialists.

TABLE VI-30

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: BRANDON GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.02	.03	0.6	0.5	0.6	0.0	50.0	50.0
OS-OG	.11	.08	.08	3.1	2.0	1.6	-27.3	0.0	-27.3
OG	.13	.10	.11	3.6	2.5	2.2	-23.1	10.0	-15.4
SS-SL	.02	.04	.07	0.6	1.0	1.4	100.0	75.0	250.0
OS-SL	.26	.14	.20	7.2	3.6	4.1	-46.2	42.9	-23.1
SL	.28	.18	.27	7.8	4.6	5.5	-35.7	50.0	-3.6
SS	.04	.06	.10	1.1	1.5	2.0	50.0	66.7	150.0
OS	.38	.22	.28	10.6	5.6	5.7	-42.1	27.3	-26.3
Sub-total	.41	.28	.38	11.4	7.1	7.7	-31.7	35.7	-7.3
BRANDON:									
SS-SG	.98	.70	.89	27.2	17.8	18.1	-28.6	27.1	-9.2
OS-SG	.55	.90	1.18	15.3	22.9	24.0	63.6	31.1	114.5
SG	1.53	1.59	2.06	42.5	40.5	42.0	3.9	29.6	34.6
SS-OG	.22	.18	.19	6.1	4.6	3.9	-18.2	5.6	-13.6
OS-OG	.47	.40	.41	13.1	10.2	8.4	-14.9	2.5	-12.8
OG	.68	.58	.60	18.9	14.8	12.2	-14.7	3.4	-11.8
SS-SL	.08	.23	.20	2.2	5.9	4.1	187.5	-13.0	150.0
OS-SL	.08	.20	.41	2.2	5.1	8.4	150.0	105.0	412.5
SL	.17	.43	.61	4.7	10.9	12.4	152.9	41.9	258.8
SS	1.28	1.11	1.28	35.6	28.2	26.1	-13.3	15.3	0.0
OS	1.10	1.49	2.00	30.6	37.9	40.7	35.5	34.2	81.8
Sub-total	2.38	2.60	3.28	66.1	66.2	66.8	9.2	26.2	37.8
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.07	.07	.10	1.9	1.8	2.0	0.0	42.9	42.9
OS-OG	.01	.00	.00	0.3	0.0	0.0	-100.0	0.0	-100.0
OG	.08	.08	.10	2.2	2.0	2.0	0.0	25.0	25.0
SS-SL	.33	.29	.30	9.2	7.4	6.1	-12.1	3.4	-9.1
OS-SL	.00	.02	.01	0.0	0.5	0.2	0.0	-50.0	0.0
SL	.33	.30	.31	9.2	7.6	6.3	-9.1	3.3	-6.1
SS	.41	.36	.40	11.4	9.2	8.1	-12.2	11.1	-2.4
OS	.01	.02	.01	0.3	0.5	0.2	100.0	-50.0	0.0
Sub-total	.42	.38	.42	11.7	9.7	8.6	-9.5	10.5	0.0
TOTAL	3.21	3.26	4.07	89.2	83.0	82.9	1.6	24.8	26.8
Radiology	.09	.16	.19	2.5	4.1	3.9	77.8	18.8	111.1
Pathology	.09	.30	.40	2.5	7.6	8.1	233.3	33.3	344.4
Anesthesia	.22	.21	.25	6.1	5.3	5.1	-4.5	19.0	13.6
GRAND TOTAL	3.60	3.93	4.91	100.0	100.0	100.0	9.2	24.9	36.4

Overall, increased patient commonality between Brandon group GPs and other physicians in Brandon was such that in ten years the revenue multiplier increased by 37.8%.

COMMON PATIENTS' CONTACT RATE

It can be seen from Table VI-31 that additional revenues were generated by Brandon group GPs by increasing the patient contact rate on common patients common to other GPs in the same group from 2.20 to 2.56, an increase of 16.4% in ten years.

Physicians in the same groups increased their contact rate by 14.6% on common patients and physicians in other groups followed with an increase of 14.0%.

Solo practitioners, on the other hand, decreased their contact rate on these common patients by 11.0%.

Overall, Brandon physicians increased the contact rates of patients in common with Brandon group GPs by 12.8% over the ten years.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

In Table VI-32 it can be seen that consultations performed by physicians in Brandon on patients in common with Brandon group GPs remained relatively constant at about 27.0-28.0% of revenues from common patients.

Within the groups and solo practices, however, major changes occurred. For instance, Brandon group GPs saw consultation revenue on common patients with other GPs in the same group decrease by 79.2% over ten years, a drop from 22.5% of revenues from common patients to 4.7% of revenues. This helps explain the drop of 17.8% in the revenue per contact over these ten years.

The same phenomenon occurred with GPs in solo and group practices with drops of 43.4% and 41.8% respectively.

It appears that increased patient commonality accounted for the increase in average patient loads over the ten years, and that decreases in revenue per contact were due to decreases in consultations performed on common patients. Given the diminished role of consultations and

TABLE VI-31

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: BRANDON GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.74	1.70	2.29	-2.3	34.7	31.6
OS-OG	1.68	1.65	1.74	-1.8	5.5	3.6
OG	1.69	1.67	1.93	-1.2	15.6	14.2
SS-SL	2.51	2.05	1.90	-18.3	-7.3	-24.3
OS-SL	2.24	1.75	1.84	-21.9	5.1	-17.9
SL	2.29	1.87	1.88	-18.3	0.5	-17.9
SS	2.14	1.92	1.98	-10.3	3.1	-7.5
OS	2.04	1.71	1.81	-16.2	5.8	-11.3
Sub-total	2.06	1.80	1.89	-12.6	5.0	-8.3
BRANDON:						
SS-SG	2.20	2.05	2.56	-6.8	24.9	16.4
OS-SG	2.17	2.17	2.41	0.0	11.1	11.1
SG	2.19	2.09	2.51	-4.6	20.1	14.6
SS-OG	1.67	1.76	1.98	5.4	12.5	18.6
OS-OG	1.86	1.76	2.07	-5.4	17.6	11.3
OG	1.78	1.76	2.03	-1.1	15.3	14.0
SS-SL	3.23	2.25	3.40	-30.3	51.1	5.3
OS-SL	2.08	2.66	1.73	27.9	-35.0	-16.8
SL	2.55	2.43	2.27	-4.7	-6.6	-11.0
SS	2.15	2.05	2.58	-4.7	25.9	20.0
OS	2.04	2.15	2.13	5.4	-0.9	4.4
Sub-total	2.11	2.09	2.38	-0.9	13.9	12.8
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	2.30	2.45	2.94	6.5	20.0	27.8
OS-OG	1.82	2.07	1.50	13.7	-27.5	-17.6
OG	2.27	2.44	2.89	7.5	18.4	27.3
SS-SL	3.00	2.57	3.16	-14.3	23.0	5.3
OS-SL	2.70	2.75	3.06	1.9	11.3	13.3
SL	2.99	2.58	3.15	-13.7	22.1	5.4
SS	2.83	2.55	3.10	-9.9	21.6	9.5
OS	2.00	2.65	2.60	32.5	-1.9	30.0
Sub-total	2.82	2.55	3.09	-9.6	21.2	9.6
TOTAL	2.21	2.13	2.42	-3.6	13.6	9.5
Radiology	1.26	1.33	0.01	5.6	-99.2	-99.2
Pathology	1.78	2.00	2.09	12.4	4.5	17.4
Anesthesia	1.08	1.07	1.07	-0.9	0.0	-0.9
GRAND TOTAL	2.08	2.01	2.16	-3.4	7.5	3.8

TABLE VI-32

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: BRANDON GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	.54	9.74	3.21	1703.7	-67.0	494.4
OS-OG	48.18	55.43	55.70	15.0	0.5	15.6
OG	42.44	46.24	42.97	9.0	-7.1	1.2
SS-SL	3.77	5.25	4.77	39.3	-9.1	26.5
OS-SL	24.90	45.75	51.99	83.7	13.6	108.8
SL	23.24	36.98	39.36	59.1	6.4	69.4
SS	2.44	6.80	4.36	178.7	-35.9	78.7
OS	32.01	49.30	53.07	54.0	7.6	65.8
Sub-total	29.29	40.33	40.38	37.7	0.1	37.9
BRANDON:						
SS-SG	22.50	9.71	4.69	-56.8	-51.7	79.2
OS-SG	40.93	38.57	43.85	-5.8	13.7	7.1
SG	29.16	25.94	27.04	-11.0	4.2	-7.3
SS-OG	16.20	16.25	9.43	0.3	-42.0	-41.8
OS-OG	32.67	34.65	46.13	6.1	33.1	41.2
OG	27.40	29.01	34.48	5.9	18.9	25.8
SS-SL	17.65	19.04	9.99	7.9	-47.5	-43.4
OS-SL	20.52	33.06	30.19	61.1	-8.7	47.1
SL	19.06	25.52	23.49	33.9	-8.0	23.2
SS	21.11	12.71	6.24	-39.8	-50.9	-70.4
OS	35.92	36.79	41.53	2.4	12.9	15.6
Sub-total	27.95	26.55	27.75	-5.0	4.5	-0.7
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.19	1.33	2.38	11.8	78.9	100.0
OS-OG	19.76	31.55	51.93	59.7	64.6	162.8
OG	2.56	2.52	3.71	-1.6	47.2	44.9
SS-SL	1.81	1.73	1.75	-4.4	1.2	-3.3
OS-SL	9.49	14.84	29.48	56.4	98.7	210.6
SL	1.86	2.44	2.77	31.2	13.5	48.9
SS	1.70	1.65	1.91	-2.9	15.8	12.4
OS	17.15	17.41	33.79	1.5	94.1	97.0
Sub-total	2.00	2.45	3.00	22.5	22.4	50.0
TOTAL	24.76	24.96	26.39	0.8	5.7	6.6
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	.56	.21	.31	-62.5	47.6	-44.6
Anesthesia	.37	4.19	4.47	32.4	6.7	108.1
GRAND TOTAL	22.05	20.74	21.88	-5.9	5.5	-0.8

increased patient commonality it appears that increased revenues by Brandon group GPs over the ten years were a result of informal referrals (i.e., not consultations) between Brandon group GPs and solo practitioners in Brandon or a spontaneous increase in the number of physicians that these patients wanted to see. Commonality of patients within a group practice increased somewhat with specialists in the same practice, whereas commonality of patients among group practices in Brandon has decreased over time.

It appears that there may be some competition for patients among group practices, but that cooperation exists and has increased substantially between group practitioners and solo practitioners. Alternatively, patients may be loyal to a particular group practice and will not seek care from physicians in other group practices but are still willing to seek care from solo practitioners.

BRANDON SOLO SPECIALISTS

From 1971/72 to 1981/82 the per capita number of Brandon solo specialists increased by 114.9%. The major increase occurred in the first five years with an increase of 78.5%, followed by a 20.4% increase in the next five years. Interestingly, the large increase in the per capita number of Brandon solo specialists in the first five years of 78.5% also saw a decrease in their average patient loads of 28.9%. Their average gross revenues adjusted for fee schedule increases dropped in parallel by 23.8%. The drop in average gross revenue was dampened by an increase in the patient contact rate of 36.8%, which overshadowed a drop in revenue per contact of 21.7%.

In the last five year period their gross revenues increased by 80.3%, fueled by an increase of 86.2% in their average patient load. A drop in their patient contact rate of 37.0% outweighed the 53.8% increase in their average revenue per contact, and as a result, the average revenue per patient fell a slight amount.

Given this change in average patient load of 32.5% over ten years, one can examine the commonality data to determine the impact of a decreased patient load followed by an increased patient load.

PATIENT MULTIPLIERS

It can be seen from Table VI-33 that in 1981/82 the pool of patients that were patients common to Brandon solo specialists generated a patient multiplier of 1.55 additional patients as patients of other physicians in Brandon. This compares to 0.86 additional patients in 1971/72, an increase of 80.2%. Almost all of this increase occurred in the first five years with very little increase in the last five years.

However, when one examines the patient multipliers of patients common to Brandon solo specialists in the same specialty with other Brandon solo specialists in the same specialty, it can be seen that the patient multiplier was 0.00 in 1971/72 and increased to 0.03 in 1976/77, a negligible change.

In the case of patient multipliers of patients common to Brandon solo specialists of the same specialty and Brandon group specialists of the same specialty, there was a decrease in the patient multiplier from 0.05 in 1971/72 to 0.03 in 1976/77, but again negligible.

However, other specialists, and this includes GPs being viewed as a specialty, increased their patient multipliers on these patients from 0.81 additional patients in 1971/72 to 1.40 additional patients in 1981/82, for an increase of 72.8%.

It appears that the major reason for the drop in the average patient loads of Brandon solo specialists in the first five years is due to decreases in the commonality of patients with physicians in Winnipeg and in rural Manitoba of 29.6% and 14.9% respectively in the first five years. This trend was reversed in the last five years and patient commonality increased by 31.6% with Winnipeg physicians and 57.5% with rural physicians. During this increase in commonality as seen through the patient multipliers, it can be seen that average patient loads of Brandon solo specialists increased by 86.2%.

REVENUE MULTIPLIERS

In 1971/72 patients common to Brandon solo specialists and other physicians in Brandon generated an additional $1.04 for all Brandon physicians for each dollar generated by Brandon solo specialists, as can

TABLE VI-33

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: BRANDON SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.01	.02	0.8	0.3	0.6	-50.0	100.0	0.0
OS-OG	.07	.06	.06	2.9	1.9	1.8	-14.3	0.0	-14.3
OG	.10	.07	.08	4.1	2.2	2.4	-30.0	14.3	-20.0
SS-SL	.01	.02	.03	0.4	0.6	0.9	100.0	50.0	200.0
OS-SL	.17	.10	.14	7.1	3.1	4.2	-41.2	40.0	-17.6
SL	.18	.12	.17	7.5	3.7	5.2	-33.3	41.7	-5.6
SS	.04	.03	.05	1.7	0.9	1.5	-25.0	66.7	25.0
OS	.24	.16	.20	10.0	4.9	6.1	-33.3	25.0	-16.7
Sub-total	.27	.19	.25	11.2	5.9	7.6	-29.5	31.6	-7.4
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.05	.03	.08	2.1	0.9	2.4	-40.0	166.7	60.0
OS-OG	.50	.82	.94	20.7	25.3	28.5	64.0	14.6	88.0
OG	.56	.85	1.02	23.2	26.2	30.9	51.8	20.0	82.1
SS-SL	.00	.03	.07	0.0	0.9	2.1	0.0	133.3	0.0
OS-SL	.30	.62	.46	12.4	19.1	13.9	106.7	-25.8	53.3
SL	.30	.65	.53	12.4	20.1	16.1	116.7	-18.5	76.7
SS	.05	.07	.15	2.1	2.2	4.5	40.0	114.3	200.0
OS	.81	1.44	1.40	33.6	44.4	42.4	77.8	-2.8	72.8
Sub-total	.86	1.50	1.55	35.7	46.3	47.0	74.4	3.3	80.2
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.16	.09	.16	6.6	2.8	4.8	-43.8	77.8	0.0
OG	.16	.09	.16	6.6	2.8	4.8	-43.8	77.8	0.0
SS-SL	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS-SL	.32	.30	.47	13.3	9.3	14.2	-6.3	56.7	46.9
SL	.32	.31	.47	13.3	9.6	14.2	-3.1	51.6	46.9
SS	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS	.47	.39	.63	19.5	12.3	19.1	-17.0	61.5	34.0
Sub-total	.47	.40	.63	19.5	12.0	19.1	-14.9	57.5	34.0
TOTAL	1.61	2.09	2.43	66.8	64.5	73.6	29.8	16.3	50.9
Radiology	.30	.39	.26	12.4	12.0	7.9	30.0	-33.3	-13.3
Pathology	.40	.63	.50	16.6	19.4	15.2	57.5	-20.6	25.0
Anesthesia	.09	.13	.11	3.7	4.0	3.3	44.4	-15.4	22.2
GRAND TOTAL	2.41	3.24	3.30	100.0	100.0	100.0	34.4	1.9	36.9

be seen in Table VI-34. By 1976/77 the revenue multiplier was $2.05, an increase of 97.1%, remaining almost constant at $2.04 by 1981/82.

Specialists of the same specialty, whether in group or solo practice, did not increase their revenue multipliers to any great extent on patients they had in common with Brandon solo specialists. Whereas, specialists, whether in group or solo practice, did increase their revenue multipliers on patients they had in common with Brandon solo specialists who were of a different specialty.

COMMON PATIENTS' CONTACT RATE

Over the first five years Brandon solo specialists with patients in common with other Brandon solo specialists of the same specialty, increased their patient contact rate on common patients by 171.0%, followed by a decrease of 72.3% in the last five years, as shown in Table VI-35. The decrease in patient load of 28.9% from 1971/72 to 1976/77 was compensated by an increase in the patient contact rate from 2.90 to 7.86, an increase of 171.0%. From 1976/77 to 1981/82 their average patient loads increased by 86.2% (see Table VI-5) and their patient contact rate fell by 72.3% to 2.18.

The contact rate per patient of patients common to Brandon solo specialists and Brandon group specialists of the same specialty increased by 15.6% over the ten years.

The contact rate per patient of patients common to Brandon solo specialists and Brandon group specialists in a different specialty increased by 34.2% over the ten years.

Overall, the contact rate of patients common to Brandon solo specialists and Brandon specialists of the same specialty, whether in group or solo practice, only increased by 7.9% in ten years.

However, the contact rate of patients common to Brandon solo specialists and Brandon specialists of a different specialty, whether in group or solo practice, increased by 18.8% in ten years to 3.09.

It appears that a rapid influx of physicians, which temporarily drives down average patient load, results in patients being serviced more intensively. Once average patient loads have returned to "normal", the

TABLE VI-38

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: BRANDON SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.01	.02	1.1	0.3	0.5	-66.7	100.0	-33.3
OS-OG	.11	.08	.08	4.0	2.3	2.1	-27.3	0.0	-27.3
OG	.14	.09	.10	5.1	2.6	2.6	-35.7	11.1	-28.6
SS-SL	.01	.04	.04	0.4	1.1	1.0	300.0	0.0	300.0
OS-SL	.35	.17	.22	12.8	4.9	5.8	-51.4	29.4	-37.1
SL	.37	.21	.26	13.6	6.0	6.8	-43.2	23.8	-29.7
SS	.05	.05	.06	1.8	1.4	1.6	0.0	20.0	20.0
OS	.46	.25	.30	16.8	7.2	7.9	-45.7	20.0	-34.8
Sub-total	.51	.30	.36	18.7	8.6	9.4	-41.2	20.0	-29.4
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.06	.06	.09	2.2	1.7	2.4	0.0	50.0	50.0
OS-OG	.56	1.08	1.16	20.5	30.9	30.4	92.9	7.4	107.1
OG	.62	1.14	1.25	22.7	32.7	32.7	83.9	9.6	101.6
SS-SL	.00	.05	.08	0.0	1.4	2.1	0.0	60.0	0.0
OS-SL	.42	.86	.72	15.4	24.6	18.8	104.8	-16.3	71.4
SL	.42	.91	.79	15.4	26.1	20.7	116.7	-13.2	88.1
SS	.06	.11	.17	2.2	3.2	4.5	83.3	54.5	183.3
OS	.98	1.94	1.87	35.9	55.6	49.0	98.0	-3.6	90.8
Sub-total	1.04	2.05	2.04	38.1	58.7	53.4	97.1	-0.5	96.2
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.21	.11	.19	7.7	3.2	5.0	-47.6	72.7	-9.5
OG	.21	.11	.19	7.7	3.2	5.0	-47.6	72.7	-9.5
SS-SL	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS-SL	.47	.34	.58	17.2	9.7	15.2	-27.7	70.6	23.4
SL	.47	.35	.59	17.2	10.0	15.4	-25.5	68.6	25.5
SS	.00	.01	.00	0.0	0.3	0.0	0.0	-100.0	0.0
OS	.68	.45	.78	24.9	12.9	20.4	-33.8	73.3	14.7
Sub-total	.69	.45	.78	25.3	12.9	20.4	-34.8	73.3	13.0
TOTAL	2.23	2.81	3.18	81.7	80.5	83.2	26.0	13.2	42.6
Radiology	.16	.19	.17	5.9	5.4	4.5	18.8	-10.5	6.3
Pathology	.20	.32	.30	7.3	9.2	7.9	60.0	-6.3	50.0
Anesthesia	.12	.18	.17	4.4	5.2	4.5	50.0	-5.6	41.7
GRAND TOTAL	2.73	3.49	3.82	100.0	100.0	100.0	27.8	9.5	39.9

TABLE VI-35

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: BRANDON SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	1.65	1.63	1.60	-1.2	-1.8	-3.0
GS-GG	1.67	1.76	1.96	5.4	11.4	17.4
GG	1.66	1.74	1.88	4.8	8.0	13.3
SS-SL	1.95	2.03	1.90	4.1	-6.4	-2.6
GS-SL	3.05	2.07	1.93	-32.1	-6.8	-36.7
SL	2.98	2.06	1.93	-30.9	-6.3	-35.2
SS	1.76	1.89	1.80	7.4	-4.8	2.3
GS	2.63	1.95	1.94	-25.9	-0.5	-26.2
Sub-total	2.52	1.95	1.91	-22.6	-2.1	-24.2
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	2.11	2.83	2.44	34.1	-13.8	15.6
GS-GG	2.02	2.60	2.71	28.7	4.2	34.2
GG	2.03	2.61	2.69	28.6	3.1	32.5
SS-SL	2.90	7.86	2.18	171.0	-72.3	-24.8
GS-SL	3.58	3.87	3.86	8.1	-0.3	7.8
SL	3.58	4.08	3.63	14.0	-11.0	1.4
SS	2.14	5.36	2.31	150.5	-56.9	7.9
GS	2.60	3.14	3.09	20.8	-1.6	18.8
Sub-total	2.58	3.24	3.01	25.6	-7.1	16.7
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	2.60	1.00	1.00	-61.5	0.0	-61.5
GS-GG	3.36	4.03	3.79	19.9	-6.0	12.8
GG	3.35	4.03	3.79	20.3	-6.0	13.1
SS-SL	.00	1.74	2.18	0.0	25.3	0.0
GS-SL	4.42	4.00	4.00	-9.5	0.0	-9.5
SL	4.42	3.95	3.99	-10.6	1.0	-9.7
SS	2.60	1.72	2.16	-33.8	25.6	-16.9
GS	4.07	4.01	3.95	-1.5	-1.5	-2.9
Sub-total	4.07	3.97	3.94	-2.5	-0.8	-3.2
TOTAL	3.01	3.26	3.14	8.3	-3.7	4.3
Radiology	1.25	1.32	.01	5.6	-99.2	-99.2
Pathology	1.77	2.11	2.15	19.2	1.9	21.5
Anaesthesia	1.10	1.10	1.08	0.0	-1.8	-1.8
GRAND TOTAL	2.51	2.72	2.68	8.4	-1.5	6.8

patient contact rate returns to "normal". This appears to be the case for Brandon solo specialists during these years.

On the other hand the contact rate per patient of patients common to Brandon solo specialists and Brandon solo specialists of a different specialty only increased by 7.8% over the ten years.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

Examination of Table VI-36 shows that in the first five years that for patients common to Brandon solo specialists and other Brandon solo specialists of the same specialty, that consultations revenue from these common patients decreased by 14.4% from 18.3% of revenues from common patients to 15.6%. In the last five years the situation reversed itself and consultations as a percentage of revenues climbed to 43.7%, an increase of 180.0%, which helps to explain the increase in the revenue per contact of 53.8% in the same time frame.

Brandon solo specialists of the same specialty also increased consultations revenue, but by 89.3% over the ten years.

In a similar vein, but to a lesser degree, Brandon group specialists of the same specialty increased their consultation revenues as a percent of revenues from common patients by 29.6% over the ten years.

On the other hand, Brandon group specialists of a different specialty, including GPs, decreased their consultation revenues as a percentage of revenues by 15.3% over the ten years.

BRANDON GROUP SPECIALISTS

From Table VI-5, as previously seen, the per capita number of Brandon group specialists fell by 2.2% in the first five years, then a further 7.9% in the last five years for a total decline of 10.0% over the ten years. During the first five years, their average gross revenues adjusted for fee schedule increases grew by 19.1% as a result of an 11.6% increase in average patient load and an 8.4% increase in average revenue per contact, tempered somewhat by a decline of 1.6% in the patient contact rate. In the last five years their average gross revenues increased by 24.5%, but this time fueled by an increase in the contact

TABLE VI-36

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: BRANDON SOLO SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	61.26	74.06	69.57	20.9	-6.1	13.6
OS-OG	38.62	48.75	48.07	26.2	-1.4	24.5
OG	43.65	52.23	53.17	19.7	1.8	21.8
SS-SL	39.73	46.44	36.03	16.9	-22.4	-9.3
OS-SL	33.85	35.32	47.09	4.3	33.3	39.1
SL	34.07	37.20	45.47	9.2	22.2	33.5
SS	54.69	53.71	48.93	-1.8	-8.9	-10.5
OS	34.98	39.52	47.34	13.0	19.8	35.3
Sub-total	36.74	41.78	47.61	13.7	14.0	29.6
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	34.83	31.82	45.15	-8.6	41.9	29.6
OS-OG	31.22	34.72	26.44	11.2	-23.8	-15.3
OG	31.55	34.56	27.83	9.5	-19.5	-11.8
SS-SL	18.25	15.62	43.74	-14.4	180.0	139.7
OS-SL	10.35	18.69	19.59	80.6	4.8	89.3
SL	10.40	18.53	21.91	78.2	18.2	110.7
SS	33.98	24.79	44.52	-27.0	79.6	31.0
OS	22.24	27.58	23.82	24.0	-13.6	7.1
Sub-total	22.92	27.43	25.53	19.7	-6.9	11.4
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0
OS-OG	5.45	1.32	3.96	-75.8	200.0	-27.3
OG	5.42	1.32	3.96	-75.6	200.0	-26.9
SS-SL	.00	6.53	60.34	0.0	824.0	0.0
OS-SL	.98	3.33	6.02	239.8	80.8	514.3
SL	.98	3.39	6.35	245.9	87.3	548.0
SS	.00	6.50	60.17	0.0	825.7	0.0
OS	2.38	2.85	5.51	19.7	93.3	131.5
Sub-total	2.37	2.90	5.76	22.4	98.6	143.0
TOTAL	19.77	25.01	23.19	26.5	-7.3	17.3
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	.62	1.12	.31	80.6	-72.3	-50.0
Anesthesia	1.92	10.43	4.10	443.2	-60.7	113.5
GRAND TOTAL	16.20	20.10	19.31	24.1	-3.9	19.2

rate per patient of 17.1% and an increase in the average revenue per contact of 17.7%. Average patient load, however, fell by a modest 2.1%.

PATIENT MULTIPLIERS

From Table VI-37 it can be seen that in 1971/72 patients common to Brandon group specialists and other physicians in the same group practice had a patient multiplier of 0.83 which increased by 6.0% to 0.88 in 1976/77, then to 1.18, a further increase of 34.1%. A major part of this increase in commonality occurred with specialists in the same group practice who were in a different specialty as opposed to those in the same specialty.

As patient multipliers were increasing within the same group practice, the opposite was happening with patients in common with other group practices in Brandon. Patient multipliers of patients common to Brandon group specialists and other group practices in Brandon declined by 27.8% over the ten years, indicating that a decrease in informal patient referrals or in consultations was taking place among group practices in Brandon. Alternatively, an explanation could be that patients were becoming more loyal to specialists in group practices over time.

Brandon solo GPs and Brandon solo specialists of a different specialty than that of Brandon group specialists who had patients in common with them, increased their patient multipliers from 0.10 to 0.21 in the first five years, an increase of 110.0%, further increased them to 0.33 or 57.1% in the following five years. Over ten years this represented an increase of 230.0%.

Over the ten years patient commonality of Brandon group specialists' patients with physicians from Winnipeg and rural Manitoba increased by 13.6% and 39.0% respectively, indicating that referrals between Brandon group specialists and physicians from other regions were on the increase.

Brandon group specialists over these ten years increased patient commonality within their group practices and diminished patient commonality with other Brandon group practices. Patient commonality, especially, grew between Brandon group specialists of one specialty with Brandon GPs and solo specialists of another specialty. Patient commonality also increased with physicians from outside Brandon.

TABLE VI-37

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: BRANDON GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.01	.02	0.7	0.3	0.5	-50.0	100.0	0.0
OS-OG	.07	.05	.06	2.5	1.6	1.6	-28.6	20.0	-14.3
OG	.09	.06	.07	3.2	2.0	1.9	-33.3	16.7	-22.2
SS-SL	.01	.01	.04	0.4	0.3	1.1	0.0	300.0	300.0
OS-SL	.12	.09	.14	4.3	2.9	3.8	-25.0	55.6	16.7
SL	.13	.11	.18	4.7	3.6	4.9	-15.4	63.6	38.5
SS	.03	.03	.06	1.1	1.0	1.6	0.0	100.0	100.0
OS	.19	.15	.19	6.8	4.9	5.1	-21.1	26.7	0.0
Sub-total	.22	.17	.25	7.9	5.5	6.7	-22.7	47.1	13.6
BRANDON:									
SS-SG	.17	.13	.22	6.1	4.2	5.9	-23.5	69.2	29.4
OS-SG	.65	.75	.96	23.3	24.4	25.9	15.4	28.0	47.7
SG	.83	.88	1.18	29.7	28.7	31.8	6.0	34.1	42.2
SS-OG	.01	.01	.01	0.4	0.3	0.3	0.0	0.0	0.0
OS-OG	.35	.32	.25	12.5	10.4	6.7	-8.6	-21.9	-28.6
OG	.36	.32	.26	12.9	10.4	7.0	-11.1	-18.8	-27.8
SS-SL	.01	.01	.05	0.4	0.3	1.3	0.0	400.0	400.0
OS-SL	.10	.21	.33	3.6	6.8	8.9	110.0	57.1	230.0
SL	.11	.22	.37	3.9	7.2	10.0	100.0	68.2	236.4
SS	.19	.14	.28	6.8	4.6	7.5	-26.3	100.0	47.4
OS	1.10	1.28	1.54	39.4	41.7	41.5	16.4	20.3	40.0
Sub-total	1.30	1.42	1.81	46.6	46.3	48.8	9.2	27.5	39.2
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.00	.00	0.4	0.0	0.0	-100.0	0.0	-100.0
OS-OG	.13	.11	.17	4.7	3.6	4.6	-15.4	54.5	30.8
OG	.13	.11	.17	4.7	3.6	4.6	-15.4	54.5	30.8
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.27	.36	.40	9.7	11.7	10.8	33.3	11.1	48.1
SL	.27	.36	.40	9.7	11.7	10.8	33.3	11.1	48.1
SS	.01	.00	.00	0.4	0.0	0.0	-100.0	0.0	-100.0
OS	.40	.47	.57	14.3	15.3	15.4	17.5	21.3	42.5
Sub-total	.41	.47	.57	14.7	15.3	15.4	14.6	21.3	39.0
TOTAL	1.92	2.06	2.64	68.8	67.1	71.2	7.3	28.2	37.5
Radiology	.22	.27	.26	7.9	8.8	7.0	22.7	-3.7	18.2
Pathology	.49	.57	.60	17.6	18.6	16.2	16.3	5.3	22.4
Anesthesia	.16	.16	.21	5.7	5.2	5.7	0.0	31.3	31.3
GRAND TOTAL	2.79	3.07	3.71	100.0	100.0	100.0	10.0	20.8	33.0

REVENUE MULTIPLIERS

Revenue multipliers, as seen in Table VI-38, show to what extent changes in patient commonality affect the gross revenues of physicians.

For patients common to Brandon group specialists and other physicians in the same group practice, the revenue multipliers increased from $1.04 to $1.13 in ten years, an increase of 8.7%.

In the case of physicians in other group practices in Brandon, their revenue multipliers declined by 25.8% from $0.31 to $0.23 in ten years.

Solo practitioners, on the other hand, saw their revenue multipliers increase from $0.12 to $0.35, an increase of 191.7%.

Therefore, net gains in gross revenues on services to these common patients was achieved by physicians within the same group practice and by solo practitioners. Net losses on these common patients were suffered by physicians in other group practices.

COMMON PATIENTS' CONTACT RATE

From Table VI-39 it can be seen that the contact rate of patients common to Brandon group specialists and other physicians in the same group decreased by 7.4% in the first five years and then increased by 15.4% in the subsequent five years for a net increase of 6.9% over ten years.

With patients common to physicians in other group practices in Brandon, the contact rate increased by 27.5% in the ten years.

On the other hand, Brandon solo practitioners showed a decrease in the contact rate of 4.2%. This, coupled with a large increase in their revenue multipliers, indicates that the revenues per contact were on the increase.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From Table VI-40 one can see if consultations are an increasing source of revenues with these changes in patient commonality.

For patients common to Brandon group specialists and other physicians within the same group practice, consultations revenue as a percentage of revenues generated on common patients increased by 19.2% over the ten years.

TABLE VI-38

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: BRANDON GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.01	.01	1.1	0.4	0.3	-66.7	0.0	-66.7
OS-OG	.08	.06	.06	3.0	2.2	1.9	-25.0	0.0	-25.0
OG	.11	.08	.07	4.1	3.0	2.3	-27.3	-12.5	-36.4
SS-SL	.02	.02	.04	0.7	0.7	1.3	0.0	100.0	100.0
OS-SL	.18	.12	.14	6.7	4.5	4.5	-33.3	16.7	-22.2
SL	.20	.14	.18	7.4	5.2	5.8	-30.0	28.6	-10.0
SS	.05	.04	.05	1.9	1.5	1.6	-20.0	25.0	0.0
OS	.26	.18	.20	9.7	6.7	6.5	-30.8	11.1	-23.1
Sub-total	.31	.22	.25	11.5	8.2	8.1	-29.0	13.6	-19.4
BRANDON:									
SS-SG	.28	.19	.23	10.4	7.1	7.5	-32.1	21.1	-17.9
OS-SG	.76	.76	.90	28.3	28.5	29.2	0.0	18.4	18.4
SG	1.04	.95	1.13	38.7	35.6	36.7	-8.7	18.9	8.7
SS-OG	.01	.01	.01	0.4	0.4	0.3	0.0	0.0	0.0
OS-OG	.29	.25	.22	10.8	9.4	7.1	-13.8	-12.0	-24.1
OG	.31	.26	.23	11.5	9.7	7.5	-16.1	-11.5	-25.8
SS-SL	.01	.01	.04	0.4	0.4	1.3	0.0	300.0	300.0
OS-SL	.11	.22	.31	4.1	8.2	10.1	100.0	40.9	181.8
SL	.12	.23	.35	4.5	8.6	11.4	91.7	52.2	191.7
SS	.31	.21	.29	11.5	7.9	9.4	-32.3	38.1	-6.5
OS	1.16	1.24	1.42	43.1	46.4	46.1	6.9	14.5	22.4
Sub-total	1.47	1.45	1.71	54.6	54.3	55.5	-1.4	17.9	16.3
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.00	.00	0.4	0.0	0.0	-100.0	0.0	-100.0
OS-OG	.12	.11	.16	4.5	4.1	5.2	-8.3	45.5	33.3
OG	.13	.11	.16	4.8	4.1	5.2	-15.4	45.5	23.1
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.31	.36	.40	11.5	13.5	13.0	16.1	11.1	29.0
SL	.31	.36	.40	11.5	13.5	13.0	16.1	11.1	29.0
SS	.01	.00	.01	0.4	0.0	0.3	-100.0	0.0	0.0
OS	.43	.47	.56	16.0	17.6	18.2	9.3	19.1	30.2
Sub-total	.44	.47	.57	16.4	17.6	18.5	6.8	21.3	29.5
TOTAL	2.22	2.14	2.53	82.5	80.1	82.1	-3.6	18.2	14.0
Radiology	.11	.13	.12	4.1	4.9	3.9	18.2	-7.7	9.1
Pathology	.17	.22	.21	6.3	8.2	6.8	29.4	-4.5	23.5
Anesthesia	.19	.18	.22	7.1	6.7	7.1	-5.3	22.2	15.8
GRAND TOTAL	2.69	2.67	3.08	100.0	100.0	100.0	-0.7	15.4	14.5

TABLE VI-39

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: BRANDON GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.95	1.82	1.76	-6.7	-3.3	-9.7
OS-OG	1.67	1.69	2.24	1.2	32.5	34.1
OG	1.74	1.71	2.14	-1.7	25.1	23.0
SS-SL	2.38	1.84	2.04	-22.7	10.9	-14.3
OS-SL	2.44	2.16	1.89	-11.5	-12.5	-22.5
SL	2.43	2.11	1.92	-13.2	-9.0	-21.0
SS	2.12	1.83	1.96	-13.7	7.1	-7.5
OS	2.16	1.99	1.99	-7.9	0.0	-7.9
Sub-total	2.16	1.96	1.98	-9.3	1.0	-8.3
BRANDON:						
SS-SG	2.54	2.29	2.72	-9.8	18.8	7.1
OS-SG	2.24	2.12	2.42	-5.4	14.2	8.0
SG	2.31	2.14	2.47	-7.4	15.4	6.9
SS-OG	2.49	1.99	2.13	-20.1	7.0	-14.5
OS-OG	1.88	1.87	2.42	-0.5	29.4	28.7
OG	1.89	1.87	2.41	-1.1	28.9	27.5
SS-SL	2.59	3.37	2.69	30.1	-20.2	3.9
OS-SL	2.92	2.97	2.78	1.7	-6.4	-4.8
SL	2.89	2.99	2.77	3.5	-7.4	-4.2
SS	2.54	2.34	2.70	-7.9	15.4	6.3
OS	2.19	2.20	2.49	0.5	13.2	13.7
Sub-total	2.24	2.21	2.53	-1.3	14.5	12.9
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	3.09	3.57	2.00	15.5	-44.0	-35.3
OS-OG	2.93	3.21	3.90	9.6	21.5	33.1
OG	2.94	3.21	3.88	9.2	20.9	32.0
SS-SL	1.60	2.70	4.16	68.8	54.1	160.0
OS-SL	3.52	3.63	4.21	3.1	16.0	19.6
SL	3.52	3.63	4.21	3.1	16.0	19.6
SS	2.99	2.79	3.47	-6.7	24.4	16.1
OS	3.33	3.53	4.11	6.0	16.4	23.4
Sub-total	3.33	3.53	4.11	6.0	16.4	23.4
TOTAL	2.46	2.49	2.82	1.2	13.3	14.6
Radiology	1.27	1.33	.01	4.7	-99.2	-99.2
Pathology	2.08	2.43	2.47	16.8	1.6	18.8
Anesthesia	1.08	1.08	1.08	0.0	0.0	0.0
GRAND TOTAL	2.22	2.30	2.47	3.6	7.4	11.3

TABLE VI-40

COMMON PATIENTS: CONSULTATIONS AS A PERCENTATE OF REVENUE

BASE PHYSICIANS: BRANDON GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	47.53	63.30	64.64	33.2	2.1	36.0
OS-OG	36.94	49.07	42.21	32.8	-14.0	14.3
OG	39.55	51.86	46.82	31.1	-9.7	18.4
SS-SL	61.45	41.97	49.41	-31.7	17.7	-19.6
OS-SL	18.28	34.65	46.57	89.6	34.4	154.8
SL	23.57	35.79	47.17	51.8	31.8	100.1
SS	54.16	50.55	53.57	-6.7	6.0	-1.1
OS	24.22	39.50	45.33	63.1	14.8	87.2
Sub-total	29.21	41.38	47.07	41.7	13.8	61.1
BRANDON:						
SS-SG	20.00	26.43	25.42	32.2	-3.8	27.1
OS-SG	25.06	21.92	28.99	-12.5	32.3	15.7
SG	23.69	22.83	28.25	-3.6	23.7	19.2
SS-OG	52.77	42.42	43.44	-19.6	2.4	-17.7
OS-OG	14.58	15.22	20.53	4.4	34.9	40.8
OG	16.21	16.18	21.66	-0.2	33.9	33.6
SS-SL	19.05	23.15	51.85	21.6	124.0	172.2
OS-SL	11.81	18.00	22.24	52.4	23.6	88.3
SL	12.66	18.23	25.73	44.0	41.1	103.2
SS	21.35	26.97	29.90	26.3	10.9	40.0
OS	21.17	19.84	26.25	-6.3	32.3	24.0
Sub-total	21.21	20.88	26.86	-1.6	28.6	26.6
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	9.91	24.85	75.90	150.8	205.4	665.9
OS-OG	3.86	3.53	4.14	-8.5	17.3	7.3
OG	4.13	3.60	4.63	-12.8	28.6	12.1
SS-SL	32.34	13.12	33.85	-59.4	158.0	4.7
OS-SL	1.66	2.20	3.17	32.5	44.1	91.0
SL	1.68	2.25	3.49	33.9	55.1	107.7
SS	10.69	15.05	42.48	40.8	182.3	297.4
OS	2.28	2.51	3.44	10.1	37.1	50.9
Sub-total	2.39	2.56	3.81	7.1	48.8	59.4
TOTAL	18.62	18.92	23.74	1.6	25.5	27.5
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	.37	.73	.69	97.3	-5.5	86.5
Anesthesia	.98	3.17	4.23	223.5	33.4	331.6
GRAND TOTAL	15.37	15.21	19.46	-1.0	27.9	26.6

For patients common to physicians in other group practices, consultations revenue as a percentage of revenues generated on common patients increased by 33.6% in ten years. Coupled with a decline in revenue multipliers, this indicates that of the decrease in the revenues generated on common patients, an increasing proportion was due to consultations.

Solo practitioners, however, increased their consultations as a proportion of revenues by 103.2% in the ten years on those common patients.

Consultations revenue derived from common patients became increasingly important for solo practitioners who had patients in common with specialists in group practices.

VI-3-4 RURAL MANITOBA COMMONALITY DATA

The per capita number of physicians in rural Manitoba has remained essentially unchanged from 1971/72 to 1981/82, growing only by 2.2% (Table VI-3). Except for solo specialists in rural Manitoba, which were too few in number to provide for stable statistics, the gross revenues of rural physicians adjusted for fee schedule changes increased by 15.7% for solo GPs and 10.3% for group GPs. Group specialists, however, only saw a negligible increase of 0.5%. The ratio between high and low average gross revenues diminished from 1.49 to 1.29 over the ten years.

RURAL SOLO GENERAL PRACTICE

From 1971/72 to 1981/82 the per capita number of rural solo GPs increased by 7.6% with identical growth rates of 3.7% in the first five years and the last five years.

The average gross revenues of rural solo GPs adjusted for fee schedule increases grew by 3.9% in the first five years mainly due to an increase of 4.8% in average patient loads. Average revenues per contact decreased by 5.9% and were accompanied by an increase in the contact rate per patient of 5.4%.

From 1976/77 to 1981/82, however, the average revenues of rural solo GPs increased by 11.5%, fueled by an increase in average patient load of 4.6%, an increase in the contact rate of 5.1% and an increase in the average revenue per contact of 1.5%.

The net result over ten years is an increase in average gross revenues of 15.9% due to an increase in average patient load of 9.6%, an increase in the patient contact rate of 10.7%, dampened by a decrease in the revenue per contact of 4.5%.

PATIENT MULTIPLIERS

The patient multipliers as can be seen in Table VI-41 for patients common to rural solo GPs and to other rural physicians, increased from 0.62 to 0.95, an increase of 53.2% in the first five years, followed by an increase of 9.5% in the subsequent five years.

These increases in patient commonality occurred mainly among GPs in rural Manitoba whether in group or solo practice. Rural solo GPs increased the patient multipliers of patients they have in common with one another from 0.42 to 0.65, an increase of 54.8% in the first five years. In the last five years, they increased the patient multipliers to 0.74 or another 13.8% over five years for a cumulative increase over ten years of 76.2%.

Rural group GPs increased the patient multipliers on these patients from 0.16 to 0.26 over the ten years for an increase of 62.5%. Most of the increase, 50.0% points, occurred in the first five years.

Patient commonality with physicians from Winnipeg decreased during the ten years and increased with Brandon physicians, except that the multipliers in the latter case are too small to make any major difference.

Therefore, rural solo GPs increased their average patient loads and patient contact rate by increasing the patient multipliers of patients they had in common with one another.

TABLE VI-41

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: RURAL SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.09	.06	.04	5.3	3.1	2.0	-33.3	-33.3	-55.6
OS-OG	.22	.15	.16	13.0	7.7	7.9	-31.8	6.7	-27.3
OG	.31	.21	.20	18.3	10.8	9.9	-32.3	-4.8	-35.5
SS-SL	.13	.21	.15	7.7	10.8	7.4	61.5	-28.6	15.4
OS-SL	.23	.16	.23	13.6	8.2	11.4	-30.4	43.8	0.0
SL	.36	.37	.39	21.3	19.0	19.3	2.8	5.4	8.3
SS	.22	.27	.20	13.0	13.8	9.9	22.7	-25.9	-9.1
OS	.45	.31	.39	26.6	15.9	19.3	-31.1	25.8	-13.3
Sub-total	.67	.58	.59	39.6	29.7	29.2	-13.4	1.7	-11.9
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.03	.03	1.8	1.5	1.5	0.0	0.0	0.0
OS-OG	.04	.05	.05	2.4	2.6	2.5	25.0	0.0	25.0
OG	.07	.09	.08	4.1	4.6	4.0	28.6	-11.1	14.3
SS-SL	.01	.02	.01	0.6	1.0	0.5	100.0	-50.0	0.0
OS-SL	.01	.01	.03	0.6	0.5	1.5	0.0	200.0	200.0
SL	.02	.03	.04	1.2	1.5	2.0	50.0	33.3	100.0
SS	.04	.06	.04	2.4	3.1	2.0	50.0	-33.3	0.0
OS	.04	.06	.08	2.4	3.1	4.0	50.0	33.3	100.0
Sub-total	.09	.12	.13	5.3	6.2	6.4	33.3	8.3	44.4
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.16	.24	.26	9.5	12.3	12.9	50.0	8.3	62.5
OS-OG	.03	.02	.02	1.8	1.0	1.0	-33.3	0.0	-33.3
OG	.19	.27	.27	11.2	13.8	13.4	42.1	0.0	42.1
SS-SL	.42	.65	.74	24.9	33.3	36.6	54.8	13.8	76.2
US-SL	.02	.03	.02	1.2	1.5	1.0	50.0	-33.3	0.0
SL	.43	.68	.77	25.4	34.9	38.1	58.1	13.2	79.1
SS	.57	.89	1.00	33.7	45.6	49.5	56.1	12.4	75.4
OS	.05	.05	.04	3.0	2.6	2.0	0.0	-20.0	-20.0
Sub-total	.62	.95	1.04	36.7	48.7	51.5	53.2	9.5	67.7
TOTAL	1.38	1.65	1.75	81.7	84.6	86.6	19.6	6.1	26.8
Radiology	.14	.12	.08	8.3	6.2	4.0	-14.3	-33.3	-42.9
Pathology	.12	.14	.15	7.1	7.2	7.4	16.7	7.1	25.0
Anesthesia	.05	.05	.04	3.0	2.6	2.0	0.0	-20.0	-20.0
GRAND TOTAL	1.69	1.95	2.02	100.0	100.0	100.0	15.4	3.6	19.5

REVENUE MULTIPLIERS

As in the case of patient multipliers, the major increases in the revenue multipliers of patients common to rural solo GPs was among rural solo and group GPs, as can be seen in Table VI-42.

Over the ten years the revenue multipliers of patients common to rural solo GPs and other rural solo GPs increased from $0.51 additional revenue per patient to $0.83 additional revenue per patient, an increase of 62.7%.

In the case of rural group GPs, they increased their revenue multipliers on these common patients from $0.15 additional revenue per patient to $0.23 in ten years, for an increase of 53.3%.

Winnipeg physicians showed a decrease in their revenue multipliers over the ten years with patients they had in common with rural solo GPs from $0.90 to $0.71 or a decrease of 21.1% over ten years. Brandon physicians showed an increase in their revenue multipliers from $0.10 to $0.16 over ten years.

COMMON PATIENTS' CONTACT RATE

The contact rate per patient of patients common to rural solo GPs with other rural solo GPs increased by 11.0% over the ten years, whereas for rural group GPs it increased by 8.9% (Table VI-43).

The contact rate per patient for patients common to physicians in Winnipeg and in Brandon decreased by 13.8% and 7.2% respectively over the ten years.

From Table VI-43 it can be seen that increased patient contacts, although moderate, were a source of additional revenues for rural solo GPs.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From Table VI-44 it can be seen that increased revenue per patient by rural solo GPs was partly due to an increase in the consultations on common patients which went from 1.6% of revenue from common patients in 1971/72 to 6.2% in revenue in 1981/82, an increase of 284.4%.

TABLE VI-42

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: RURAL SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.08	.05	.04	4.0	2.2	1.8	-37.5	-20.0	-50.0
OS-OG	.33	.25	.23	16.7	11.2	10.3	-24.2	-8.0	-30.3
OG	.41	.30	.26	20.7	13.4	11.7	-26.8	-13.3	-36.6
SS-SL	.14	.17	.10	7.1	7.6	4.5	21.4	-41.2	-28.6
OS-SL	.36	.29	.34	18.2	12.9	15.2	-19.4	17.2	-5.6
SL	.50	.47	.44	25.3	21.0	19.7	-6.0	-6.4	-12.0
SS	.22	.22	.14	11.1	9.8	6.3	0.0	-36.4	-36.4
OS	.68	.54	.56	34.3	24.1	25.1	-20.6	3.7	-17.6
Sub-total	.90	.77	.71	45.5	34.4	31.8	-14.4	-7.8	-21.1
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.03	.03	1.5	1.3	1.3	0.0	0.0	0.0
OS-OG	.05	.08	.08	2.5	3.6	3.6	60.0	0.0	60.0
OG	.08	.11	.11	4.0	4.9	4.9	37.5	0.0	37.5
SS-SL	.02	.03	.01	1.0	1.3	0.4	50.0	-66.7	-50.0
OS-SL	.01	.01	.04	0.5	0.4	1.8	0.0	300.0	300.0
SL	.03	.04	.05	1.5	1.8	2.2	33.3	25.0	66.7
SS	.05	.06	.04	2.5	2.6	1.8	20.0	-33.3	-20.0
OS	.06	.09	.12	3.0	4.0	5.4	50.0	33.3	100.0
Sub-total	.10	.15	.16	5.1	6.7	7.2	50.0	6.7	60.0
RURAL:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.15	.24	.23	7.6	10.7	10.3	60.0	-4.2	53.3
OS-OG	.06	.04	.03	3.0	1.8	1.3	-33.3	-25.0	-50.0
OG	.21	.28	.26	10.6	12.5	11.7	33.3	-7.1	23.8
SS-SL	.51	.77	.83	25.8	34.4	37.2	51.0	7.8	62.7
OS-SL	.03	.06	.05	1.5	2.7	2.2	100.0	-16.7	66.7
SL	.54	.82	.88	27.3	36.6	39.5	51.9	7.3	63.0
SS	.66	1.01	1.06	33.3	45.1	47.5	53.0	5.0	60.6
OS	.09	.10	.08	4.5	4.5	3.6	11.1	-20.0	-11.1
Sub-total	.75	1.11	1.14	37.9	49.6	51.1	48.0	2.7	52.0
TOTAL	1.76	2.02	2.00	88.9	90.2	89.7	14.8	-1.0	13.6
Radiology	.09	.07	.06	4.5	3.1	2.7	-22.2	-14.3	-33.3
Pathology	.06	.08	.10	3.0	3.6	4.5	33.3	25.0	66.7
Anaesthesia	.07	.07	.07	3.5	3.1	3.1	0.0	0.0	0.0
GRAND TOTAL	1.98	2.24	2.23	100.0	100.0	100.0	13.1	-0.4	12.6

TABLE VI-43

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: RURAL SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	2.15	2.01	2.25	-6.5	11.9	4.7
GS-GG	1.92	1.86	1.78	-3.1	-4.3	-7.3
GG	1.99	1.91	1.88	-4.0	-1.6	-5.5
SS-SL	2.81	2.31	2.00	-17.8	-13.4	-28.8
GS-SL	2.06	1.99	1.78	-3.4	-10.6	-13.6
SL	2.33	2.17	1.87	-6.9	-13.8	-19.7
SS	2.54	2.24	2.05	-11.8	-8.5	-19.3
GS	1.99	1.93	1.78	-3.0	-7.8	-10.6
Sub-total	2.17	2.07	1.87	-4.6	-9.7	-13.8
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	1.68	1.86	1.75	10.7	-5.9	4.2
GS-GG	1.73	1.68	1.89	-2.9	12.5	9.2
GG	1.70	1.75	1.83	2.9	4.6	7.6
SS-SL	3.13	2.10	2.33	-32.9	11.0	-25.6
GS-SL	1.94	2.52	1.62	29.9	-35.7	-16.5
SL	2.66	2.22	1.79	-16.5	-19.4	-32.7
SS	2.13	1.96	1.89	-8.0	-3.6	-11.3
GS	1.77	1.82	1.77	2.8	-2.7	0.0
Sub-total	1.95	1.89	1.81	-3.1	-4.2	-7.2
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
GS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-GG	2.14	2.29	2.33	7.0	1.7	8.9
GS-GG	2.48	2.50	2.28	0.8	-8.8	-8.1
GG	2.20	2.30	2.33	4.5	1.3	5.9
SS-SL	2.83	3.21	3.14	13.4	-2.2	11.0
GS-SL	3.17	3.45	2.70	8.8	-21.7	-14.8
SL	2.85	3.22	3.13	13.0	-2.8	9.8
SS	2.65	2.96	2.93	11.7	-1.0	10.6
GS	2.72	3.03	2.52	11.4	-16.8	-7.4
Sub-total	2.65	2.96	2.92	11.7	-1.4	10.2
TOTAL	2.37	2.57	2.49	8.4	-3.1	5.1
Radiology	1.25	1.13	.03	-9.6	-97.3	-97.6
Pathology	1.61	1.66	1.72	3.1	3.6	6.8
Anesthesia	1.13	1.08	1.08	-4.4	0.0	-4.4
GRAND TOTAL	2.18	2.38	2.31	9.2	-2.9	6.0

TABLE VI-44

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: RURAL SOLO GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	3.11	3.91	2.31	25.7	-40.9	-25.7
OS-OG	39.93	52.63	56.89	31.8	8.1	42.5
OG	32.85	44.45	49.17	35.3	10.6	49.7
SS-SL	2.99	3.49	3.50	16.7	0.3	17.1
OS-SL	39.90	43.97	50.21	10.2	14.2	25.8
SL	29.42	28.96	39.11	-1.6	35.0	32.9
SS	3.04	3.58	3.18	17.8	-11.2	4.6
OS	39.91	47.95	52.90	20.1	10.3	32.5
Sub-total	30.97	35.02	42.88	13.1	22.4	38.5
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	20.20	20.18	12.60	-0.1	-37.6	-37.6
OS-OG	35.12	37.94	43.49	8.0	14.6	23.8
OG	29.70	32.64	36.20	9.9	10.9	21.9
SS-SL	7.23	16.75	24.35	131.7	45.4	236.8
OS-SL	19.56	27.43	31.66	40.2	15.4	61.9
SL	11.58	20.07	30.04	73.3	49.7	159.4
SS	15.12	18.64	16.27	23.3	-12.7	7.6
OS	32.53	36.53	39.58	12.3	8.3	21.7
Sub-total	24.89	29.38	34.19	18.0	16.4	37.4
RURAL:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	4.37	13.31	13.33	204.6	0.2	205.0
OS-OG	22.78	41.22	62.57	80.9	51.8	174.7
OG	9.36	17.47	18.61	86.6	6.5	98.8
SS-SL	1.60	5.60	6.15	250.0	9.8	284.4
OS-SL	8.15	21.75	51.01	166.9	134.5	525.9
SL	2.00	6.69	8.82	234.5	31.8	341.0
SS	2.24	7.43	7.72	231.7	3.9	244.6
OS	17.44	30.15	55.03	72.9	82.5	215.5
Sub-total	4.07	9.43	11.05	131.7	17.2	171.5
TOTAL	19.13	20.62	24.09	7.8	16.8	25.9
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	7.31	4.84	7.22	-33.8	49.2	-1.2
Anaesthesia	5.27	7.51	10.58	42.5	40.9	100.8
GRAND TOTAL	16.98	18.62	21.64	9.7	16.2	27.4

For rural group GPs with patients in common with rural solo GPs, consultation revenue increased from 4.4% of revenue from common patients to 13.3% in the ten years.

In the case of rural solo specialists, consultations as a percentage of revenue increased from 8.2% to 51.0% of revenue from common patients. Similarly for rural group specialists, consultations as a percentage of gross revenue increased from 22.8% to 62.6% of revenue from common patients.

Rural solo GPs increased their revenues per patient by increasing the number of consultations performed on patients they had in common with other rural solo specialists. Rather than an increase in informal referrals among patients they had in common, rural solo GPs increased their formal referral patterns through an increase in consultations on common patients.

RURAL GROUP GENERAL PRACTICE

The per capita number of rural group GPs has decreased by 5.5% over the ten years with the major decline in the first five years, 5.6%, followed by a slight increase of 0.2% in the last five years.

Their average gross revenues adjusted for fee schedule increases, grew by 10.3% over the ten years, as can be seen in Table VI-6. An increased average patient load of 12.4%, coupled with an increase in the contact rate per patient of 11.3%, which was dampened by a drop in the revenue per contact, resulted in the increase of 10.3% in average revenues.

During the ten years the revenue per patient declined some 1.8% but the increased average patient load of 12.4% more than compensated for the decrease.

PATIENT MULTIPLIERS

From Table VI-45 it can be seen that patients common to rural group GPs and to physicians within the same group practice did not increase their average patient loads by increasing the commonality of patients within the group practice, as evidenced by growth of their patient multipliers from 0.95 additional patients to 0.99 over the ten years.

TABLE VI-45

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: RURAL GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.04	.04	1.6	1.9	1.7	33.3	0.0	33.3
OS-OG	.15	.13	.14	8.1	6.3	6.0	-13.3	7.7	-6.7
OG	.19	.18	.18	10.3	8.7	7.7	-5.3	0.0	-5.3
SS-SL	.08	.11	.11	4.3	5.3	4.7	37.5	0.0	37.5
OS-SL	.13	.15	.24	7.0	7.2	10.2	15.4	60.0	84.6
SL	.21	.26	.35	11.4	12.6	14.9	23.8	34.6	66.7
SS	.11	.16	.15	5.9	7.7	6.4	45.5	-6.3	36.4
OS	.28	.28	.38	15.1	13.5	16.2	0.0	35.7	35.7
Sub-total	.39	.44	.53	21.1	21.3	22.6	12.8	20.5	35.9
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.01	.01	0.5	0.5	0.4	0.0	0.0	0.0
OS-OG	.02	.02	.03	1.1	1.0	1.3	0.0	50.0	50.0
OG	.03	.03	.04	1.6	1.4	1.7	0.0	33.3	33.3
SS-SL	.00	.01	.00	0.0	0.5	0.0	0.0	-100.0	0.0
OS-SL	.00	.00	.01	0.0	0.0	0.4	0.0	0.0	0.0
SL	.01	.01	.02	0.5	0.5	0.9	0.0	100.0	100.0
SS	.01	.02	.02	0.5	1.0	0.9	100.0	0.0	100.0
OS	.02	.02	.04	1.1	1.0	1.7	0.0	100.0	100.0
Sub-total	.04	.04	.06	2.2	1.9	2.6	0.0	50.0	50.0
RURAL:									
SS-SG	.88	.80	.88	47.6	38.6	37.4	-9.1	10.0	0.0
OS-SG	.08	.09	.11	4.3	4.3	4.7	12.5	22.2	37.5
SG	.95	.89	.99	51.4	43.0	42.1	-6.3	11.2	4.2
SS-OG	.09	.10	.12	4.9	4.9	5.1	11.1	20.0	33.3
OS-OG	.02	.01	.01	1.1	0.5	0.4	-50.0	0.0	-50.0
OG	.11	.11	.13	5.9	5.3	5.5	0.0	18.2	18.2
SS-SL	.17	.28	.31	9.2	13.5	13.2	64.7	10.7	82.4
OS-SL	.01	.01	.01	0.5	0.5	0.4	0.0	0.0	0.0
SL	.18	.29	.32	9.7	14.0	13.6	61.1	10.3	77.8
SS	1.13	1.18	1.31	61.1	57.0	55.7	4.4	11.0	15.9
OS	.10	.11	.12	5.4	5.3	5.1	10.0	9.1	20.0
Sub-total	1.24	1.29	1.43	67.0	62.3	60.9	4.0	10.9	15.3
TOTAL	1.66	1.77	2.02	89.7	85.5	86.0	6.6	14.1	21.7
Radiology	.09	.09	.08	4.9	4.3	3.4	0.0	-11.1	-11.1
Pathology	.06	.16	.22	3.2	7.7	9.4	166.7	37.5	266.7
Anesthesia	.03	.04	.04	1.6	1.9	1.7	33.3	0.0	33.3
GRAND TOTAL	1.85	2.07	2.35	100.0	100.0	100.0	11.9	13.5	27.0

A similar situation exists with other group practices in that they only increased their patient multipliers from 0.11 to 0.13 over the ten years.

However, it appears that patient commonality between rural group GPs and solo GPs increased from 0.17 to 0.31 over ten years or an increase of 77.8%.

It appears that the increased patient loads of rural group GPs has occurred through increased patient commonality with rural solo GPs.

Changing referral patterns show increased patient commonality with solo specialists in Winnipeg from 0.13 in 1971/72 to 0.24 in 1981/82, or an increase of 84.6%. However, patient commonality with Winnipeg group specialists and with physicians in Brandon was relatively unchanged.

REVENUE MULTIPLIERS

The marginal increase in patient commonality within rural group practices due to increased commonality of GP patients left the revenue multipliers within group practices intact at $1.26 from 1971/72 to 1981/82, as seen in Table VI-46.

Revenue multipliers, due to increased patient commonality between rural group practices and patients of rural group GPs, increased from $0.12 to $0.14.

It appears that rural solo GPs gained the most from patients they had in common with rural group GPs due to increased revenue multipliers of 111.1% from $0.18 to $0.38 over ten years.

Winnipeg solo specialists increased their revenue multipliers from $0.23 to $0.43, an increase of 87.0% over the ten years.

Whereas rural solo GPs saw a decrease over the ten years in the commonality of patients with Winnipeg physicians, the reverse is true for rural group GPs.

COMMON PATIENTS' CONTACT RATE

The contact rate per patient common to rural group GPs was increased the most by rural solo GPs from 2.44 to 3.01, or 22.0% over ten years, as seen in Table VI-47.

TABLE VI-46

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: RURAL GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.04	.04	1.3	1.5	1.3	33.3	0.0	33.3
OS-OG	.27	.25	.24	11.4	9.5	7.9	-7.4	-4.0	-11.1
OG	.29	.29	.28	12.2	11.1	9.3	0.0	-3.4	-3.4
SS-SL	.08	.10	.10	3.4	3.8	3.3	25.0	0.0	25.0
OS-SL	.23	.32	.43	9.7	12.2	14.2	39.1	34.4	87.0
SL	.30	.42	.53	12.7	16.0	17.5	40.0	26.2	76.7
SS	.10	.13	.13	4.2	5.0	4.3	30.0	0.0	30.0
OS	.49	.58	.68	20.7	22.1	22.5	18.4	17.2	38.8
Sub-total	.59	.71	.81	24.9	27.1	26.8	20.3	14.1	37.3
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.01	.01	0.4	0.4	0.3	0.0	0.0	0.0
OS-OG	.02	.03	.05	0.8	1.1	1.7	50.0	66.7	150.0
OG	.03	.04	.06	1.3	1.5	2.0	33.3	50.0	100.0
SS-SL	.01	.01	.00	0.4	0.4	0.0	0.0	-100.0	-100.0
OS-SL	.01	.01	.02	0.4	0.4	0.7	0.0	100.0	100.0
SL	.01	.02	.03	0.4	0.8	1.0	100.0	50.0	200.0
SS	.02	.02	.02	0.8	0.8	0.7	0.0	0.0	0.0
OS	.03	.04	.07	1.3	1.5	2.3	33.3	75.0	133.3
Sub-total	.05	.06	.09	2.1	2.3	3.0	20.0	50.0	60.0
RURAL:									
SS-SG	1.10	.96	1.02	46.4	36.6	33.8	-12.7	6.3	-7.3
OS-SG	.16	.18	.23	6.8	6.9	7.6	12.5	27.8	43.8
SG	1.26	1.14	1.26	53.2	43.5	41.7	-9.5	10.5	0.0
SS-OG	.09	.10	.12	3.8	3.8	4.0	11.1	20.0	33.3
OS-OG	.03	.02	.01	1.3	0.8	0.3	-33.3	-50.0	-66.7
OG	.12	.12	.14	5.1	4.6	4.6	0.0	16.7	16.7
SS-SL	.18	.32	.38	7.6	12.2	12.6	77.8	18.8	111.1
OS-SL	.02	.02	.02	0.8	0.8	0.7	0.0	0.0	0.0
SL	.20	.34	.40	8.4	13.0	13.2	70.0	17.6	100.0
SS	1.37	1.37	1.53	57.8	52.3	50.7	0.0	11.7	11.7
OS	.21	.23	.27	8.9	8.8	8.9	9.5	17.4	28.6
Sub-total	1.58	1.60	1.80	66.7	61.1	59.6	1.3	12.5	13.9
TOTAL	2.22	2.37	2.69	93.7	90.5	89.1	6.8	13.5	21.2
Radiology	.06	.06	.06	2.5	2.3	2.0	0.0	0.0	0.0
Pathology	.04	.12	.19	1.7	4.6	6.3	200.0	58.3	375.0
Anesthesia	.05	.07	.08	2.1	2.7	2.6	40.0	14.3	60.0
GRAND TOTAL	2.37	2.62	3.02	100.0	100.0	100.0	10.5	15.3	27.4

TABLE VI-47

COMMON PATIENTS: CONTACTS PER PATIENT

BASE PHYSICIANS: RURAL GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.73	1.85	2.14	6.9	15.7	23.7
OS-OG	1.81	1.82	1.78	0.6	-2.2	-1.7
OG	1.79	1.83	1.85	2.2	1.1	3.4
SS-SL	2.05	2.02	2.03	-1.5	0.5	-1.0
OS-SL	1.80	1.90	1.80	5.6	-5.3	0.0
SL	1.90	1.95	1.87	2.6	-4.1	-1.6
SS	1.95	1.97	2.06	1.0	4.6	5.6
OS	1.80	1.86	1.79	3.3	-3.8	-0.6
Sub-total	1.85	1.90	1.87	2.7	-1.6	1.1
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.63	1.69	1.76	3.7	4.1	8.0
OS-OG	1.60	1.63	1.72	1.9	5.5	7.5
OG	1.61	1.65	1.73	2.5	4.8	7.5
SS-SL	2.97	1.97	2.35	-33.7	19.3	-20.9
OS-SL	2.58	3.20	1.60	24.0	-50.0	-38.0
SL	2.78	2.34	1.76	-15.8	-24.8	-36.7
SS	2.06	1.82	1.89	-11.7	3.8	-8.3
OS	1.80	1.89	1.67	5.0	-11.6	-7.2
Sub-total	1.91	1.86	1.74	-2.6	-6.5	-8.9
RURAL:						
SS-SG	2.35	2.58	2.71	9.8	5.0	15.3
OS-SG	2.40	2.39	2.41	-0.4	0.8	0.4
SG	2.36	2.57	2.67	8.9	3.9	13.1
SS-OG	2.10	2.15	2.26	2.4	5.1	7.6
OS-OG	2.28	2.30	1.95	0.9	-15.2	-14.5
OG	2.13	2.16	2.24	1.4	3.7	5.2
SS-SL	2.44	2.66	3.01	9.0	13.2	23.4
OS-SL	2.84	2.81	2.35	-1.1	-16.4	-17.3
SL	2.46	2.66	3.00	8.1	12.8	22.0
SS	2.35	2.57	2.74	9.4	6.6	16.6
OS	2.40	2.42	2.38	0.8	-1.7	-0.8
Sub-total	2.35	2.55	2.71	8.5	6.3	15.3
TOTAL	2.22	2.38	2.46	7.2	3.4	10.8
Radiology	1.18	1.08	.03	-8.5	-97.2	-97.5
Pathology	1.74	1.79	1.82	2.9	1.7	4.6
Anesthesia	1.11	1.16	1.10	4.5	-5.2	-0.9
GRAND TOTAL	2.14	2.25	2.30	5.1	2.2	7.5

Within the same group practice it increased from 2.36 to 2.67, an increase of 13.1%.

Physicians in other group practices increased their contact rate from 2.13 to 2.24, an increase of 5.2%.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

From data in Table VI-48 on consultation revenues as a percentage of revenues from common patients, it appears that all physicians in rural Manitoba increased consultations revenue on patients common with rural group GPs.

Within the same group practice consultations revenue increased from 7.5% of common patient revenues to 15.0% in ten years, a rise of 101.1%.

Similarly physicians in other group practices also increased their consultations revenues from 7.6% to 13.1% of common patient revenues, an increase in ten years of 72.8%.

Solo specialists increased the consultations revenues on these common patients from 16.5% to 46.2% of revenues from common patients, a rise of 179.8%.

It appears that physicians in rural Manitoba increased revenues not through increased informal referrals but rather by increasing the number of consultations performed.

RURAL SOLO SPECIALISTS

Due to the small numbers of physicians in this category, only three in 1971/72 and six in both 1976/77 and 1981/82, no meaningful analysis can be performed due to the unstable nature of the resulting statistics.

RURAL GROUP SPECIALISTS

From Table VI-6 it can be seen that there has been a drop in the number of rural group specialists per capita of 15.9% over the ten years. The decrease occurred in the first five years with a drop of 23.6% followed by an increase in the subsequent five years of 10.2%.

Overall, their average gross revenues adjusted for fee schedule increases remained essentially unchanged over the ten years, though there was a shift in how they generated revenue.

TABLE VI-48

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: RURAL GROUP GENERAL PRACTICE

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.85	4.70	3.40	154.1	-27.7	83.8
OS-OG	43.52	51.99	55.44	19.5	6.6	27.4
OG	39.73	45.82	48.64	15.3	6.2	22.4
SS-SL	6.39	4.50	5.31	-29.6	18.0	-16.9
OS-SL	43.20	46.52	51.24	7.7	10.1	18.6
SL	33.93	36.83	42.94	8.5	16.6	26.6
SS	5.21	4.56	4.79	-12.5	5.0	-8.1
OS	43.37	48.93	52.74	12.8	7.8	21.6
Sub-total	36.79	40.52	44.89	10.1	10.8	22.0
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	14.59	17.11	10.06	17.3	-41.2	-31.0
OS-OG	28.84	36.41	44.97	26.2	23.5	55.9
OG	24.91	31.90	38.30	28.1	20.1	53.8
SS-SL	5.79	14.27	39.44	146.5	176.4	581.2
OS-SL	13.56	26.61	34.25	96.2	28.7	152.6
SL	10.12	18.38	35.24	81.6	91.7	248.2
SS	11.12	15.62	18.49	40.5	18.4	66.3
OS	25.19	35.01	41.90	39.0	19.7	66.3
Sub-total	20.63	28.16	37.43	36.5	32.9	81.4
RURAL:						
SS-SG	4.40	5.83	7.16	32.5	22.8	62.7
OS-SG	28.19	33.97	49.52	20.5	45.8	75.7
SG	7.47	10.33	15.02	38.3	45.4	101.1
SS-OG	4.50	5.05	8.76	12.2	73.5	94.7
OS-OG	18.05	36.41	50.52	101.7	38.8	179.9
OG	7.56	11.33	13.06	49.9	15.3	72.8
SS-SL	1.44	5.10	8.24	254.2	61.6	472.2
OS-SL	16.52	33.20	46.22	101.0	39.2	179.8
SL	2.71	6.79	10.02	150.6	47.6	269.7
SS	4.01	5.60	7.56	39.7	35.0	88.5
OS	25.97	34.17	49.34	31.6	44.4	90.0
Sub-total	6.88	9.66	13.75	40.4	42.3	99.9
TOTAL	15.17	19.41	23.87	27.9	23.0	57.4
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	7.20	4.73	16.28	-34.3	244.2	126.1
Anesthesia	1.99	9.86	16.25	395.5	64.8	716.6
GRAND TOTAL	14.18	17.54	21.26	23.7	21.2	49.9

Over the ten years their average patient load decreased by 8.3%, coupled with a decreasing patient contact rate of 3.0% but overshadowed by an increase in the revenues per contact of 13.0%. The net result of this was a 0.5% increase in average gross revenues.

PATIENT MULTIPLIERS

From Table VI-49 it can be seen that patients common to rural group specialists and other physicians within the same group practice were an increasing source of patients. In 1971/72, the patient multiplier was 0.87 additional patients, but by 1981/82 it had grown to 1.47 additional patients, an increase of 69.0%.

At the same time, physicians in other group practices saw their patient multipliers drop from 0.21 to 0.08, a drop of 61.9% over ten years.

Solo practitioners saw a drop in their patient multipliers from 0.28 to 0.21, a drop of 25.0% over the ten years. It appears that there was a drop in patient commonality between patients common to rural group specialists and other rural physicians, but an increase in patient commonality within the same group practices.

There was, however, an increase in patient commonality between rural group specialists and Winnipeg physicians. Commonality with Brandon physicians was almost non-existent in 1971/72 and declined by 1981/82.

REVENUE MULTIPLIERS

The same phenomenon was occurring in revenue multipliers as in patient multipliers, as can be seen in Table VI-50.

Other physicians within the same group practice increased their revenue multipliers on patients common with specialists in the group from $0.84 to $1.09 in ten years, an increase of 29.8%.

In the case of physicians with other groups and solo physicians, revenue multipliers decreased 56.2% and 9.5% respectively.

It appears that patients of rural group specialists were in contact more with physicians in Winnipeg than with physicians in group or solo practice in rural Manitoba in 1981/82 than was the case in 1971/72.

TABLE VI-49

COMMON PATIENTS: PATIENT MULTIPLIERS

BASE PHYSICIANS: RURAL GROUP ALL SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.02	.02	.02	1.1	0.8	0.7	0.0	0.0	0.0
OS-OG	.14	.17	.22	7.4	6.9	7.9	21.4	29.4	57.1
OG	.16	.19	.24	8.5	7.7	8.6	18.8	26.3	50.0
SS-SL	.02	.02	.03	1.1	0.8	1.1	0.0	50.0	50.0
OS-SL	.19	.27	.39	10.1	10.9	14.0	42.1	44.4	105.3
SL	.21	.29	.42	11.2	11.7	15.1	38.1	44.8	100.0
SS	.04	.04	.05	2.1	1.6	1.8	0.0	25.0	25.0
OS	.33	.44	.61	17.6	17.7	21.9	33.3	38.6	84.8
Sub-total	.37	.48	.66	19.7	19.4	23.7	29.7	37.5	78.4
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.01	.00	.00	0.5	0.0	0.0	-100.0	0.0	-100.0
OS-OG	.02	.01	.01	1.1	0.4	0.4	-50.0	0.0	-50.0
OG	.02	.01	.01	1.1	0.4	0.4	-50.0	0.0	-50.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.01	0.0	0.0	0.4	0.0	0.0	0.0
SL	.01	.00	.01	0.5	0.0	0.4	-100.0	0.0	0.0
SS	.01	.00	.00	0.5	0.0	0.0	-100.0	0.0	-100.0
OS	.02	.01	.02	1.1	0.4	0.7	-50.0	100.0	0.0
Sub-total	.03	.01	.02	1.6	0.4	0.7	-66.7	100.0	-33.3
RURAL:									
SS-SG	.01	.06	.01	0.5	2.4	3.6	500.0	66.7	900.0
OS-SG	.85	1.12	1.36	45.2	45.2	48.9	31.8	21.4	60.0
SG	.87	1.18	1.47	46.3	47.6	52.9	35.6	24.6	69.0
SS-OG	.02	.00	.00	1.1	0.0	0.0	-100.0	0.0	-100.0
OS-OG	.19	.12	.08	10.1	4.8	2.9	-36.8	-33.3	-57.9
OG	.21	.12	.08	11.2	4.8	2.9	-42.9	-33.3	-61.9
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.28	.28	.21	14.9	11.3	7.6	0.0	-25.0	-25.0
SL	.28	.28	.21	14.9	11.3	7.6	0.0	-25.0	-25.0
SS	.03	.06	.10	1.6	2.4	3.6	100.0	66.7	233.3
OS	1.33	1.52	1.65	70.7	61.3	59.4	14.3	8.6	24.1
Sub-total	1.36	1.58	1.75	72.3	63.7	62.9	16.2	10.8	28.7
TOTAL	1.75	2.07	2.43	93.1	83.5	87.4	18.3	17.4	38.9
Radiology	.06	.13	.07	3.2	5.2	2.5	116.7	-46.2	16.7
Pathology	.04	.21	.24	2.1	8.5	8.6	425.0	14.3	500.0
Anesthesia	.03	.06	.04	1.6	2.4	1.4	100.0	-33.3	33.3
GRAND TOTAL	1.88	2.48	2.78	100.0	100.0	100.0	31.9	12.1	47.9

TABLE VI-50

COMMON PATIENTS: REVENUE MULTIPLIERS

BASE PHYSICIANS: RURAL GROUP ALL SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE DISTRIBUTION			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.03	.03	.02	1.8	1.5	0.9	0.0	-33.3	-33.3
OS-OG	.15	.18	.21	8.9	8.9	9.4	20.0	16.7	40.0
OG	.17	.20	.24	10.1	9.9	10.7	17.6	20.0	41.2
SS-SL	.03	.04	.04	1.8	2.0	1.8	33.3	0.0	33.3
OS-SL	.18	.28	.37	10.7	13.9	16.5	55.6	32.1	105.6
SL	.21	.31	.42	12.4	15.3	18.8	47.6	35.5	100.0
SS	.06	.06	.07	3.6	3.0	3.1	0.0	16.7	16.7
OS	.33	.45	.59	19.5	22.3	26.3	36.4	31.1	78.8
Sub-total	.38	.52	.65	22.5	25.7	29.0	36.8	25.0	71.1
BRANDON:									
SS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS-OG	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-OG	.01	.01	.01	0.6	0.5	0.4	0.0	0.0	0.0
OG	.01	.01	.01	0.6	0.5	0.4	0.0	0.0	0.0
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
SS	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS	.02	.01	.01	1.2	0.5	0.4	-50.0	0.0	-50.0
Sub-total	.02	.01	.02	1.2	0.5	0.9	-50.0	100.0	0.0
RURAL:									
SS-SG	.02	.07	.11	1.2	3.5	4.9	250.0	57.1	450.0
OS-SG	.82	.85	.97	48.5	42.1	43.3	3.7	14.1	18.3
SG	.84	.92	1.01	49.7	45.5	48.7	9.5	18.5	29.8
SS-OG	.02	.00	.00	1.2	0.0	0.0	-100.0	0.0	-100.0
OS-OG	.14	.11	.07	8.3	5.4	3.1	-21.4	-36.4	-50.0
OG	.16	.11	.07	9.5	5.4	3.1	-31.3	-36.4	-56.3
SS-SL	.00	.00	.00	0.0	0.0	0.0	0.0	0.0	0.0
OS-SL	.20	.24	.18	11.8	11.9	8.0	20.0	-25.0	-10.0
SL	.21	.25	.19	12.4	12.4	8.5	19.0	-24.0	-9.5
SS	.04	.07	.12	2.4	3.5	5.4	75.0	71.4	200.0
OS	1.16	1.20	1.22	68.6	59.4	54.5	3.4	1.7	5.2
Sub-total	1.20	1.28	1.34	71.0	63.4	59.8	6.7	4.7	11.7
TOTAL	1.61	1.80	2.01	95.3	89.1	89.7	11.8	11.7	24.8
Radiology	.03	.06	.05	1.8	3.0	2.2	100.0	-16.7	66.7
Pathology	.02	.10	.12	1.2	5.0	5.4	400.0	20.0	500.0
Anesthesia	.03	.06	.07	1.8	3.0	3.1	100.0	16.7	133.3
GRAND TOTAL	1.69	2.02	2.24	100.0	100.0	100.0	19.5	10.9	32.5

COMMON PATIENTS' CONTACT RATE

In Table VI-51 it can be seen that the contact rate of patients common to rural group specialists and physicians within the same group declined by 8.8% over the ten years.

On the other hand, the contact rate of patients common to physicians in other groups in rural Manitoba increased by 26.9%.

Solo physicians in other specialties increased their contact rate by 67.7%, compared to a decline for solo specialists in the same specialty.

Contact rates by physicians in Winnipeg and Brandon on patients common to rural group specialists did not change materially during the ten years.

COMMON PATIENTS' CONSULTATIONS AS A PERCENTAGE OF GROSS REVENUES

Perusal of Table VI-52 shows that even though the contact rates were decreasing in rural group practices, it was consultations which were driving the increase in the revenue per contact.

Within the same group practice, consultations as a percent of revenues from common patients increased by 23.9% over the ten years.

In other group practice consultations, revenues as a percentage of revenues from patients common with rural group specialists decreased from 10.2% to 4.9% of revenues, a drop of 52.2% in ten years.

However, solo practitioners in the same specialty as the rural group specialists increased their consultations from 17.4% to 67.6% of revenues from common patients, an increase of 288.2%.

So an increased consultation rate on patients common to rural group specialists and other physicians in the same group practice was an increasing source of revenue in the ten years for group practices. However, solo specialists of the same specialty as specialists in group practices saw the largest increase in consultations over the ten years on these common patients.

TABLE VI-51

COMMON PATIENTS: CONTACTS PER PATIENTS

BASE PHYSICIANS: RURAL GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.62	1.82	1.94	12.3	6.6	19.8
OS-OG	1.71	1.78	1.88	4.1	5.6	9.9
OG	1.70	1.79	1.89	5.3	5.6	11.2
SS-SL	1.84	1.86	1.97	1.1	5.9	7.1
OS-SL	2.03	1.96	1.85	-3.4	-5.6	-8.9
SL	2.01	1.95	1.86	-3.0	-4.6	-7.5
SS	1.74	1.84	1.96	5.7	6.5	12.6
OS	1.89	1.89	1.86	0.0	-1.6	-1.6
Sub-total	1.88	1.89	1.87	0.5	-1.1	-0.5
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	1.42	1.14	2.38	-19.7	108.8	67.6
OS-OG	1.49	1.50	2.07	0.7	38.0	38.9
OG	1.47	1.49	2.13	1.4	43.0	44.9
SS-SL	3.20	1.00	1.00	-68.8	0.0	-68.8
OS-SL	2.41	4.21	1.86	74.7	-55.8	-22.8
SL	2.44	4.13	1.86	69.3	-55.0	-23.8
SS	1.48	1.13	2.35	-23.6	108.0	58.8
OS	1.69	2.13	1.99	26.0	-6.6	17.8
Sub-total	1.65	2.09	2.03	26.7	-2.9	23.0
RURAL:						
SS-SG	2.29	2.36	2.44	3.1	3.4	6.6
OS-SG	2.51	2.17	2.28	-13.5	5.1	-9.2
SG	2.51	2.18	2.29	-13.1	5.0	-8.8
SS-OG	2.29	2.29	3.08	0.0	34.5	34.5
OS-OG	2.27	2.69	2.87	18.5	6.7	26.4
OG	2.27	2.68	2.88	18.1	7.5	26.9
SS-SL	2.57	2.58	1.14	0.4	-55.8	-55.6
OS-SL	2.01	2.91	3.37	44.8	15.8	67.7
SL	2.02	2.90	3.37	43.6	16.2	66.8
SS	2.31	2.37	2.44	2.6	3.0	5.6
OS	2.37	2.35	2.44	-0.8	3.8	3.0
Sub-total	2.37	2.35	2.44	-0.8	3.8	3.0
TOTAL	2.25	2.24	2.28	-0.4	1.8	1.3
Radiology	1.14	1.12	.06	-1.8	-94.6	-94.7
Pathology	1.37	1.86	1.55	35.8	-16.7	13.1
Anaesthesia	1.10	1.25	1.11	13.6	-11.2	0.9
GRAND TOTAL	2.18	2.12	2.14	-2.8	0.9	-1.8

TABLE VI-52

COMMON PATIENTS: CONSULTATIONS AS A PERCENTAGE OF REVENUE

BASE PHYSICIANS: RURAL GROUP SPECIALISTS

LOCATION OF PRACTICE	COMMONALITY AVERAGES			PERCENTAGE CHANGE		
	1971/72	1976/77	1981/82	71-76	76-81	71-81
WINNIPEG:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	38.01	44.97	48.19	18.3	7.2	26.8
OS-OG	43.56	44.49	47.03	2.1	5.7	8.0
OG	42.71	44.55	47.14	4.3	5.8	10.4
SS-SL	30.36	41.35	51.49	36.2	24.5	69.6
OS-SL	26.74	37.78	44.02	41.3	16.5	64.6
SL	27.23	38.18	44.81	40.2	17.4	64.6
SS	34.03	42.88	50.38	26.0	17.5	48.0
OS	34.23	40.41	45.12	18.1	11.7	31.8
Sub-total	34.20	40.70	45.65	19.0	12.2	33.5
BRANDON:						
SS-SG	.00	.00	.00	0.0	0.0	0.0
OS-SG	.00	.00	.00	0.0	0.0	0.0
SG	.00	.00	.00	0.0	0.0	0.0
SS-OG	10.28	.00	8.12	-100.0	0.0	-21.0
OS-OG	27.44	58.79	23.20	114.2	-60.5	-15.5
OG	22.88	57.74	20.23	152.4	-65.0	-11.6
SS-SL	.00	.00	.00	0.0	0.0	0.0
OS-SL	14.81	9.42	40.64	-36.4	331.4	174.4
SL	14.17	9.30	40.57	-34.4	336.2	186.3
SS	9.78	.00	8.09	-100.0	0.0	-17.3
OS	23.77	46.75	29.11	96.7	-37.7	22.5
Sub-total	20.80	45.96	26.17	121.0	-43.1	25.8
RURAL:						
SS-SG	17.74	21.21	38.09	19.6	79.6	114.7
OS-SG	7.95	5.89	6.84	-25.9	16.1	-14.0
SG	8.16	7.03	10.11	-13.8	43.8	23.9
SS-OG	22.02	20.37	39.84	-7.5	95.6	80.9
OS-OG	8.73	9.32	4.21	6.8	-54.8	-51.8
OG	10.19	9.43	4.87	-7.5	-48.4	-52.2
SS-SL	17.41	16.42	67.58	-5.7	311.6	288.2
OS-SL	2.18	7.67	4.90	251.8	-36.1	124.8
SL	2.49	7.83	5.04	214.5	-35.6	102.4
SS	19.57	20.90	38.21	6.8	82.8	95.2
OS	7.03	6.56	6.41	-6.7	-2.3	-8.8
Sub-total	7.45	7.39	9.15	-0.8	23.8	22.8
TOTAL	14.01	17.09	21.16	22.0	23.8	51.0
Radiology	.00	.00	.00	0.0	0.0	0.0
Pathology	6.05	4.29	1.54	-29.1	-64.1	-74.5
Anaesthesia	.90	6.85	19.01	661.1	177.5	2012.2
GRAND TOTAL	13.35	15.25	19.02	14.2	24.7	42.5

CHAPTER VII

HOSPITAL UTILIZATION IN MANITOBA FOR 1981/82

BACKGROUND

The extensive analysis of patterns of billings and of patient flows among Manitoba physicians, in the two previous chapters, was motivated by the importance of physicians' decisions and practice behaviour in guiding the utilization and the performance of much of the rest of the health care system. It was also, as noted, a response to the opportunity to study a situation which was virtually a natural experiment, in which over a period of a decade there was a very dramatic increase in the supply of physicians in Winnipeg, almost no change in rural Manitoba, and relatively small population changes in both regions. The response of practice patterns and workloads to a large increase in physician supply could thus be examined, relative to their natural "quasi-controls".

But the largest share of health spending, and the most extensive employment, is in the hospital sector. As a share of public spending, hospital costs are roughly twice those of physician services. And in this sector, the issues and problems are frequently perceived as those of undersupply, rather than of oversupply. Accordingly, in this section of the report, patterns of utilization of hospital services are examined in some detail.

From the outset it should be emphasized that the hospital sector combines two rather different types of care, each of which raises quite different problems for service delivery and for health policy. In the broadest terms, a distinction must be made between "acute care" and "long-term care", although the exact boundary between these categories is far from clear. Moreover, the available data sources mingle the two; it is notorious that many of the patients in public general hospitals, whether or not in designated long-term units, are in fact long-term patients.

For this report it is neither necessary nor particularly helpful to try to provide a precise definition of the distinction between acute and long-term care, much less to rehearse the significant distinctions within the latter category. For purposes of formulating health care policy, the provision of hospital services for people whose needs require a response in terms of a relatively well-defined episode of care involving specific forms of intervention, following which they may be expected to return to the community, is quite different from those of people whose hospitalization may be more or less indefinite in term, perhaps with a relatively low level of diagnostic or therapeutic intervention, and which may lead to further institutionalization.

As a crude approximation to identifying long-term care patients in the Manitoba hospital system, the data sources reported here exclude those patients separated during a given year whose lengths of stay were sixty days or greater. (It should be recalled that since length of stay is not defined until the separation actually occurs, such segregation is possible only for data drawn from separations, and the episode of care, especially for very long stay patients, may have spread across more than one calendar year). Table VII-1, drawn from the annual reports of the Manitoba Health Services Commission, provides an indication of the relative numbers involved, and the way in which the proportions of short and long stay patients, thus defined, have evolved through time.

The most obvious feature of Table VII-1 is the very large proportion of total patient days accounted for by long-stay patients, 36.81% of all hospital days in 1981/82, and 32.79% of days in general hospitals. Yet only about 2% of all patients fall into this category. This reinforces the importance of the acute/long term distinction. Nearly 80% of all hospital patients stay ten days or less; 90% are separated in less than three weeks. But those who stay for more than a month, about 5% of all patients, account for nearly 50% of all days. The 2% who are referred to as long-term, two months or more, represent roughly one-third of all hospital patient days.

But equally obvious is the way in which this proportion has risen dramatically during the decade from 1971 to 1981. Long-term patients almost tripled as a share of separations from general hospitals, while their share of patient days more than quadrupled. To some extent this

TABLE VII-1

MANITOBA
Hospital Utilization by Length of Stay: 1971, 1976, and 1981/82

	Separations			Separations (Percent)		
Public General Hospitals:						
	1971	1976	1981/82	1971	1976	1981/82
1-10 days	131,432	130,643	127,778	77.36%	78.12%	78.83%
11-14 days	14,112	12,633	11,286	8.31%	7.55%	6.96%
15-19 days	9,240	8,471	7,513	5.44%	5.07%	4.63%
20-29 days	8,377	7,758	6,850	4.93%	4.64%	4.23%
30-59 days	5,522	5,468	5,502	3.25%	3.27%	3.39%
60 + days	1,212	2,266	3,162	0.71%	1.35%	1.95%
Total:	169,895	167,239	162,093	100.00%	100.00%	100.00%
All Hospitals:						
	1971	1976	1981/82	1971	1976	1981/82
1-10 days	139,808	134,910	131,583	75.58%	77.29%	78.61%
11-14 days	15,303	13,013	11,614	8.27%	7.46%	6.94%
15-19 days	10,263	8,882	7,733	5.55%	5.09%	4.62%
20-29 days	9,560	8,234	7,084	5.17%	4.72%	4.23%
30-59 days	7,098	6,129	5,742	3.84%	3.51%	3.43%
60 + days	2,949	3,292	3,636	1.59%	1.89%	2.17%
Total:	184,981	174,550	167,392	100.00%	100.00%	100.00%

	Patient Days			Patient Days (Percent)		
Public General Hospitals:						
	1971	1976	1981/82	1971	1976	1981/82
1-10 days	603,110	575,177	528,554	41.25%	36.84%	30.18%
11-14 days	173,562	155,663	139,671	11.87%	9.97%	7.97%
15-19 days	154,579	141,549	125,754	10.57%	9.07%	7.18%
20-29 days	197,991	183,485	162,239	13.54%	11.75%	9.26%
30-59 days	217,572	218,119	221,014	14.88%	13.97%	12.62%
60 + days	115,399	287,417	574,393	7.89%	18.41%	32.79%
Total:	1,462,213	1,561,410	1,751,625	100.00%	100.00%	100.00%
All Hospitals:						
	1971	1976	1981/82	1971	1976	1981/82
1-10 days	636,163	590,779	541,457	33.03%	31.40%	28.20%
11-14 days	188,360	161,518	143,753	9.78%	8.58%	7.49%
15-19 days	171,755	148,486	129,434	8.92%	7.89%	6.74%
20-29 days	226,292	194,773	167,776	11.75%	10.35%	8.74%
30-59 days	283,475	245,510	231,027	14.72%	13.05%	12.03%
60 + days	419,937	540,674	706,815	21.80%	28.73%	36.81%
Total:	1,925,982	1,881,740	1,920,262	100.00%	100.00%	100.00%

	Average Length of Stay		
Public General Hospitals:			
	1971	1976	1981/82
1-10 days	4.59	4.40	4.14
11-14 days	12.30	12.32	12.38
15-19 days	16.73	16.71	16.74
20-29 days	23.64	23.65	23.68
30-59 days	39.40	39.89	40.17
60 + days	95.21	126.84	181.65
Total:	8.61	9.34	10.81
All Hospitals:			
1-10 days	4.55	4.38	4.11
11-14 days	12.31	12.41	12.38
15-19 days	16.74	16.72	16.74
20-29 days	23.67	23.65	23.68
30-59 days	39.94	40.06	40.23
60 + days	142.40	164.24	194.39
Total:	10.41	10.78	11.47

Source: Manitoba Health Services Commission Annual Statistical Reports.
(Excludes newborns but includes non-residents in Manitoba hospitals).

increase is a statistical artifact resulting from the reclassification of the Winnipeg Municipal Hospitals into the general hospital sector. But even when all hospitals are combined, the share of long-term patients almost doubles. Not only are separation rates up among this group, their average lengths of stay are up significantly as well. Indeed for all hospitals combined, the increase in long-term patients' share of separations is almost exactly equal to their increase in average length of stay. There is little or no change in the average length of stay among the rest of the patient population.

Looked at another way, hospital utilization in Manitoba, on a per thousand population basis, dropped somewhat from 1971 to 1981/82. Separations fell 15% and patient days fell 6.3%. Separations from general hospitals fell 10.3% and days rose 12.6%, but this appears to reflect the reclassification referred to above.

But if patients with lengths of stay of 59 days or less are considered, the pattern is quite dramatically different. The percentage reduction in separations among this group is almost the same as for the whole patient population, 11.3% for general hospitals and 15.5% for all hospitals. But patient days per thousand population in general hospitals fell by 17.9% for patients staying less than sixty days, while total utilization was rising 12.6%. And for all hospitals combined, the drop was 24.3%.

(Parenthetically, it should be noted that the data reported in Chapter III (from Statistics Canada sources) showed that costs per patient day in Manitoba public general hospitals were rising significantly faster than in the rest of Canada during this decade, and particularly during the latter half of the decade. Yet the mix of patients was becoming increasingly long-term, which should tend to lower costs per patient day. This implies either that shifts in general hospital patient loads to de facto long-term cases were occurring even faster in the rest of Canada, or that the data in Chapter III understate the extent to which relative costs per patient day were rising in Manitoba).

Through time, therefore, the bed utilization by acute care patients in Manitoba has clearly been shrinking significantly. Insofar as available bed capacity in all hospitals has increasingly been occupied by long-term patients, the space accessible to acute patients has been reduced. Clinicians' perceptions of increased pressure on facilities available appear to be entirely justified. In addition, the very large increase in physician supply described in Chapters V and VI has meant that many more physicians are trying to put "their" patients into those beds. (Although as discussed in Chapter VI, the number of physicians sharing the same physical patient has increased rapidly). The ratio of "acute care patient days per full-time physician" (using the definition above, of physicians billing $20,000 or more in 1981/82, and excluding radiologists, pathologists, and anesthesiologists) has fallen by roughly 40% over this ten year period. Caught between the upper millstone of a rapidly rising physician supply, and the nether stone of a shrinking supply of beds available for acute care patients, it is not surprising physicians feel the pinch of shortages.

It does not follow, however, that the appropriate response is to build more beds and increase operating costs. Acute care use may have fallen since 1971, but it was not necessarily optimal then, even given the knowledge and technique of the day. Still less should one assume that the level of use then would be appropriate for the 1980's. Accordingly in this Chapter patterns of utilization of hospital care by "acute care" patients (i.e. those with lengths of stay of less than sixty days) by region and diagnostic category will be examined in some detail. Adjusting for differences in the age and sex mix of the populations compared, some very significant and suggestive differences in the levels of use of sub-populations within Manitoba are found.

In later chapters some specific models of care delivery will be discussed which also suggest the possibility of significant reductions in hospital utilization by acute care patients, without risk to the health of those patients.

In this and subsequent Chapters, data on utilization rates by region refer to residents of that region, not utilization in the institutions located in that region. A large proportion of the hospital capacity of Manitoba, particularly the tertiary care capacity, is located in Winnipeg, so that most of the patient-days of care provided in the province are provided within that city. But much of that care is provided to residents of other parts of the province, and must be "charged back" to the populations of those regions in computing regional utilization rates.

The disregard, in these analyses, for the long-term patients with hospital stays of sixty days or more should not be construed as implying that issues raised by their needs are unimportant. As emphasized above, such patients account for a very significant, and growing, proportion of the capacity of the hospital system. But their needs are different, and the approaches to meeting those needs, in the hospital system or out of it, will require different models from those appropriate to the vast majority of hospital patients whose episodes of care are, fortunately, short.

VII-2 AGGREGATE HOSPITAL UTILIZATION

In 1981/82 Manitoba residents accounted for 159,345 in-patient cases (excluding newborns and non-residents of Manitoba) in hospitals both inside and outside of Manitoba. The vast majority, 97.7%, received their care in the province. These patients in turn utilized 1,854,492 patient days of care for an average length of stay of 11.6 days.

On a population basis (Statistics Canada data) this represents a utilization rate of 1,807 patient days per 1,000 population and a separation rate of 155.3 in-patient cases per 1,000 population.

The above data, though interesting, are an aggregation of acute and extended care data. In this chapter the data have been defined as follows:

1) regional data are based on the location of residence of patients and not on the location of service;

2) includes Manitoba residents whether hospitalized inside or outside of Manitoba;

3) includes only in-patient cases;

4) excludes newborns;

5) patients in extended treatment facilities and specialty hospitals are excluded; and,

6) patients with a length of stay in excess of 60 days are excluded.

The purpose in so classifying the data was to exclude non-acute care in order to provide comparisons of acute hospital care received by the residents of Winnipeg, Brandon and rural Manitoba.

From Table VII-2 it can be seen that use of the above criteria results in a patient day count of 1,102,182 or 59.4% of patient days used by Manitoba residents who were hospitalized in 1981/82. However, when the number of in-patient cases meeting the above criteria are examined, these 152,742 cases represent 95.9% of all in-patient cases attributable to residents of Manitoba. Eliminating 4.1% of the in-patient cases has eliminated 40.6% of the hospital patient days. As a result this data represents more accurately acute care hospital utilization of Manitoba residents.

As to be expected, the population group over the age of 65 represents a larger proportion of in-patient acute cases, 25.6%, than that age group represents of the total Manitoba population, namely 11.9%. As well this age group utilized more hospital patient days, 39.3% of the total, relative to their numbers in hospitals. Regional differences in the proportion of patient days utilized by the elderly are minimal. However, it appears that Brandon residents over the age of 65 represent a larger proportion of in-patient cases than do residents of Winnipeg and rural Manitoba.

The average length of stay of Winnipeg residents is higher than for either Brandon or rural Manitoba residents, for patients both over and under the age of 65, by some 15-21%.

TABLE VII-2

Hospital Utilization Data by Location of Residents for 1981/82

	< 65	65 +	Total
PATIENT DAYS:			
Winnipeg	324,941	207,391	532,332
	61.0	39.0	100.0
Brandon	30,760	21,289	52,049
	59.1	40.9	100.0
Rural	313,267	204,534	517,801
	60.5	39.5	100.0
Manitoba	668,968	433,214	1,102,182
	60.7	39.3	100.0
SEPARATIONS:			
Winnipeg	50,001	16,527	66,528
	75.2	24.8	100.0
Brandon	5,400	2,138	7,538
	71.6	28.4	100.0
Rural	58,264	20,412	78,676
	74.1	25.9	100.0
Manitoba	113,665	39,077	152,742
	74.1	25.6	100.0
AVERAGE LENGTH OF STAY:			
Winnipeg	6.5	12.5	8.0
Brandon	5.7	10.0	6.9
Rural	5.4	10.0	6.6
Manitoba	5.9	11.1	7.2
AVERAGE REPEATS PER DISCRETE PATIENT:			
Winnipeg	1.26	1.41	1.29
Brandon	1.28	1.43	1.32
Rural	1.41	1.71	1.48
Manitoba	1.33	1.56	1.38

The number of repeat separations for Winnipeg and Brandon residents, whether over or under the age of 65, is almost identical. However, residents of rural Manitoba have a somewhat higher rate of repeat separations at 1.48, which is 14.7% higher than for Winnipeg residents and 12.1% higher than for Brandon residents.

Examination of Chart VII-1, which displays age-specific utilization rates by region for patient days, separations and average length of stay, demonstrates quite clearly that the utilization of hospitals by the residents of Brandon and rural Manitoba is greater in terms of patient days per 1,000 and separations per 1,000 than for Winnipeg residents in all age groups. However, when it comes to the average length of stay, Winnipeg residents of almost all age groups have a higher average length of stay than residents of Brandon and rural Manitoba. Given that these data are based on the location of residence of patients, and assuming that residents of Winnipeg are as healthy as those in Brandon and in rural Manitoba, it is intriguing to find such a consistently higher average length of stay in almost all age groups for residents of Winnipeg. As well, the proportion of elderly residents of Winnipeg in hospitals is lower than for Brandon or rural residents as seen in Table VII-2.

In order to provide a concise picture of hospital utilization in each of these regions, Chart VII-2 displays utilization rates that have been age-sex adjusted to the Manitoba population. In this way comparisons between Winnipeg, Brandon, and rural Manitoba can be made without having to worry about the age composition of each since that has been taken into account in the age-sex adjustment process.

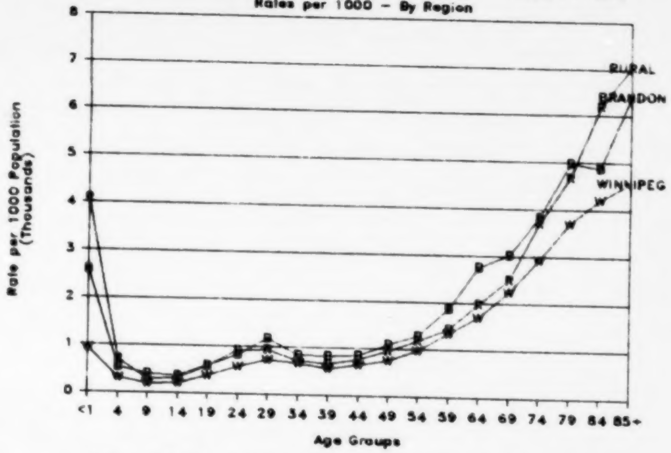
Examination of the graph on age-sex adjusted total patient days per 1,000 population in Chart VII-2 confirms the pattern found in the age specific rates in Chart VII-1. Utilization of hospitals in terms of age-sex adjusted patient days used per 1,000 population is 44.0% higher for Brandon residents, 1,340.4 to 930.6, and 34.0% higher for rural residents, when compared to Winnipeg residents, 1,247.3 to 930.6.

These differences are even greater when one looks at the rate at which residents of Brandon and rural Manitoba are hospitalized compared to Winnipeg residents. Brandon residents are hospitalized at the rate of

Chart VII-1

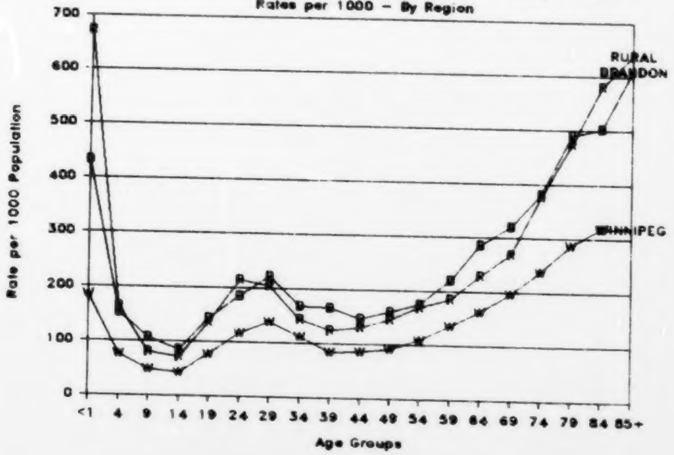
Hospital Patient Days For 1981/82

Rates per 1000 – By Region



Hospital Separations For 1981/82

Rates per 1000 – By Region



Hospital Length of Stay For 1981/82

By Region

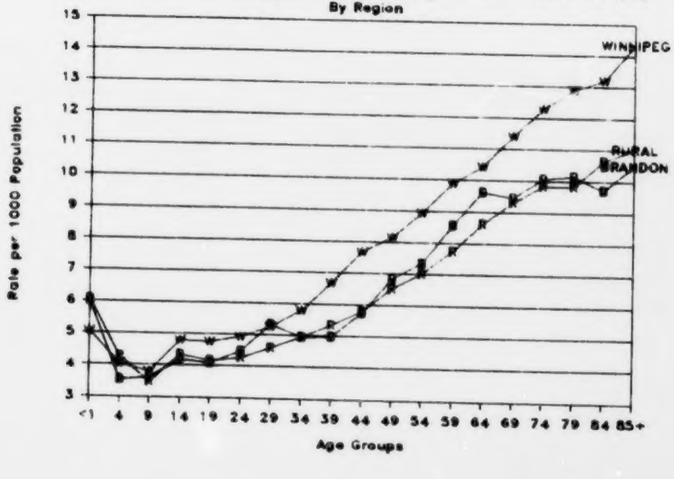
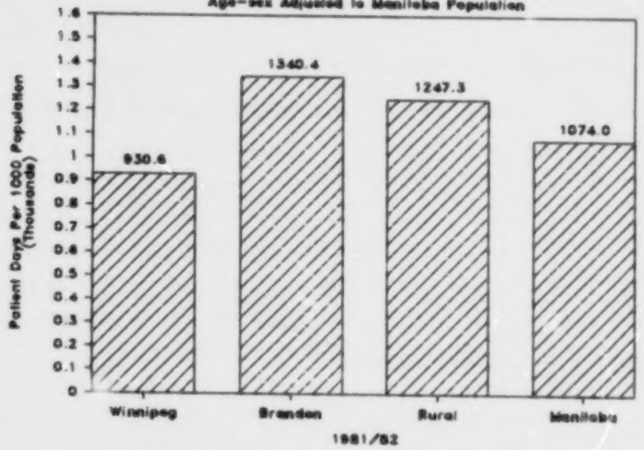
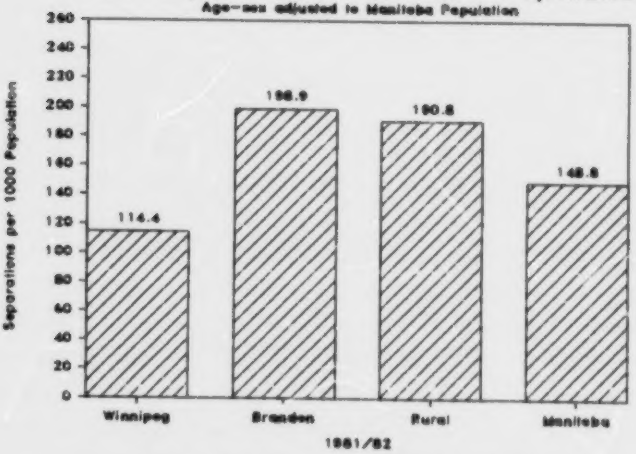


Chart VII-2

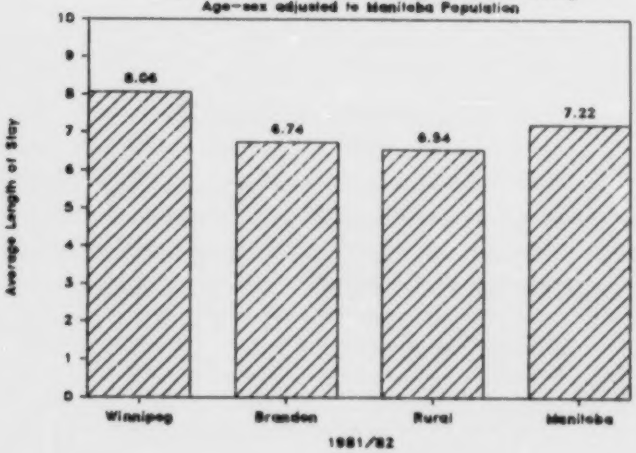
Total Patient Days Per 1000 Population



Total Separations Per 1000 Population



Total Average Length of Stay



198.9 separations per 1,000 population compared to 114.4 for Winnipeg residents, a rate which is 74.0% higher. Similarly, rural residents are hospitalized at the higher rate of 190.8 separations per 1,000 population compared to 114.4 for Winnipeg residents, a rate that is 66.8% higher.

Total average length of stay, as previously stated, is longest for Winnipeg residents, followed by Brandon residents then rural Manitoba residents.

VII-3 1981/82 HOSPITAL UTILIZATION AGE-SEX ADJUSTED TO 1971 POPULATION OF EACH REGION

In order to determine the impact of Manitoba's aging population since 1971/72, the utilization experience of 1981/82 was age-sex adjusted to reflect the 1971 population structure for each region. For instance, Winnipeg's 1971 age-sex distribution was applied to the 1981/82 hospital utilization rates for the residents of Winnipeg. The same was done for the residents of Brandon, Rural Manitoba and finally for all of Manitoba. The resultant age-sex adjusted rates when compared to the actual rate for each region will reflect the impact of the aging of the population in a way which can be quantified.

From Table VII-3 it can be seen that for Manitoba as a whole the impact of the aging of the population over the ten years was an increase in patient days per 1,000 population of 8.3%. In other words, if one imposed the age-sex specific hospital utilization rates onto Manitoba's 1971 population structure, one would expect a patient day rate of 992 per 1,000 population. However, since the 1981 age-sex population structure is different, namely there are now relatively more elderly, the patient day rate is 1,074 per 1,000 or 8.3% higher due to a more elderly population structure.

The impact of an aging population has not been uniform across the province. In Winnipeg and in rural Manitoba the impact of aging accounts for 9.0% and 8.6% respectively in the increase in patient days per 1,000 over the ten years. The impact on Brandon has been somewhat lower with an increase of 6.4% due to the aging of the population.

TABLE VII-3

Comparison of 1981/82 Actual Hospital Utilization Rates With 1981/82 Rates Age-Sex Adjusted to Each Region's 1971 Population Base

Residence of Patients	1981/82 Actual Rates (a)	1981/82 Rates Age-Sex Adjusted to Region's 1971 Population (b)	Percentage Difference (a/b)
PATIENT DAYS PER 1,000 POPULATION			
Winnipeg	933	856	9.0%
Brandon	1,436	1,350	6.4%
Rural	1,235	1,137	8.6%
Manitoba	1,074	992	8.3%
SEPARATIONS PER 1,000 POPULATION			
Winnipeg	117	110	6.4%
Brandon	208	199	4.5%
Rural	188	178	5.6%
Manitoba	149	141	5.7%
AVERAGE LENGTH OF STAY			
Winnipeg	8.0	7.8	2.5%
Brandon	6.9	6.8	1.8%
Rural	6.6	6.4	2.8%
Manitoba	7.2	7.0	2.5%

A similar pattern exists when the separation rates per 1,000 population are examined. However, the impact of the aging population has had a similar influence overall on the separations rate as on the patient day rate. This is reflected in the average length of stay data which shows that the overall average length of stay for Manitoba as a whole is 0.2 days or 2.5% longer due to the aging of the population.

The aging of the population has had a greater impact on the use of hospital resources relative to medical resources. As seen previously, the impact of the aging population on the per capita costs of medical services adjusted for fee increases from 1971/72 to 1981/82 was 4.4%. The impact on hospital utilization at 8.3% is almost double that of medical services utilization.

VII-4 HOSPITAL UTILIZATION BY ICD9-CM* CLASSIFICATION

Detailed utilization data are provided in Tables VII-4 to VII-11 on an age-sex adjusted basis, by region and by major ICD9-CM diagnostic groupings for residents of Winnipeg, Brandon and rural Manitoba.

Data in Table VII-4 on age-sex adjusted patient days per 1,000 population show wide variations in the utilization of hospitals between residents of Winnipeg, Brandon and rural Manitoba. In Table VII-5, the data on patient days per 1,000 is indexed with the Manitoba average as the base. The total age-sex adjusted patient day utilization rate per 1,000 population of Winnipeg residents is 13.4% below the Manitoba average, whereas for residents of Brandon and rural Manitoba they are above the Manitoba average by 24.8% and 16.1% respectively.

Within the diagnostic categories, the differences can be as great as the 160.8%, as exists in category 1, Infectious and Parasitic diseases in Table VII-5.

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*International Classification of Diseases, 9th Revision, Clinical Modification.

TABLE VII-4

Total Patient Days per 1000 Population - 1981/82

Diagnostic Categories	** Age-sex adjusted rates by residence:			Actual Rate
	Winnipeg	Brandon	Rural	Manitoba
1. Infectious and Parasitic Diseases	9.24	24.10	22.11	14.89
2. Neoplasms	108.19	141.95	104.08	107.97
3. Endocrine, Nutritional and Metabolic Diseases	15.46	32.56	33.27	23.23
4. Diseases of the Blood and Bloodforming Organs	5.98	7.76	9.75	7.62
5. Mental Disorders	87.08	47.14	51.74	71.92
6. Diseases of the Nervous System and Sense Organs	30.96	58.98	42.27	36.78
7. Diseases of the Circulatory System	152.76	207.08	175.49	163.20
8. Diseases of the Respiratory System	68.49	119.03	138.40	100.89
9. Diseases of the Digestive System	103.66	171.32	149.93	125.14
10. Diseases of the Genitourinary System	65.53	106.76	85.05	74.65
11. Pregnancy, Childbirth and Puerperium	78.05	125.55	130.61	98.43
12. Diseases of the Skin and Subcutaneous Tissue	11.45	15.84	24.29	16.98
13. Diseases of the Musculoskeletal System	49.08	65.14	68.20	57.21
14. Congenital Anomalies	8.07	16.69	10.74	9.54
15. Certain Conditions Originating in the Perinatal Period	1.99	3.96	5.12	3.48
16. Symptoms, Signs and Ill-Defined Conditions	27.53	60.97	54.23	39.78
17. Injury and Poisoning	84.19	108.76	108.93	94.99
18. Factors Influencing Health Status & Contact with Health Services	22.08	21.81	35.79	27.30
TOTAL	930.63	1340.36	1247.34	1074.00

** Age-sex adjusted to 1981 Manitoba Population.

Source: Manitoba Health Services Commission.
Statistics Canada Population Data.

TABLE VII-5

Total Patient Days per 1000 Population - 1981/82
Manitoba = 100.0

Diagnostic Categories	** Age-sex adjusted rates by residence:			Actual Rate
	Winnipeg	Brandon	Rural	Manitoba
1. Infectious and Parasitic Diseases	62.06	161.85	148.49	100.00
2. Neoplasms	100.20	131.47	96.40	100.00
3. Endocrine, Nutritional and Metabolic Diseases	66.55	140.16	143.22	100.00
4. Diseases of the Blood and Bloodforming Organs	78.48	101.84	127.95	100.00
5. Mental Disorders	121.08	65.55	71.94	100.00
6. Diseases of the Nervous System and Sense Organs	84.18	160.36	114.93	100.00
7. Diseases of the Circulatory System	93.60	126.89	107.53	100.00
8. Diseases of the Respiratory System	67.89	117.98	137.18	100.00
9. Diseases of the Digestive System	82.84	136.90	119.81	100.00
10. Diseases of the Genitourinary System	87.78	143.01	113.93	100.00
11. Pregnancy, Childbirth and Puerperium	79.29	127.55	132.69	100.00
12. Diseases of the Skin and Subcutaneous Tissue	67.43	93.29	143.05	100.00
13. Diseases of the Musculoskeletal System	85.79	113.86	119.21	100.00
14. Congenital Anomalies	84.59	174.95	112.58	100.00
15. Certain Conditions Originating in the Perinatal Period	57.18	113.79	147.13	100.00
16. Symptoms, Signs and Ill-Defined Conditions	69.21	153.27	136.32	100.00
17. Injury and Poisoning	88.63	114.50	114.68	100.00
18. Factors Influencing Health Status & Contact with Health Services	80.68	79.89	131.10	100.00
TOTAL	86.65	124.80	116.14	100.00

** Age-sex adjusted to 1981 Manitoba Population.

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

TABLE VII-6

Total Patient Days per 1000 Population - 1981/82
Percentage Distribution Within Categories

Diagnostic Categories	Winnipeg %	Brandon %	Rural %	Manitoba %
1. Infectious and Parasitic Diseases	0.99	1.80	1.77	1.39
2. Neoplasms	11.63	10.59	8.34	10.05
3. Endocrine, Nutritional and Metabolic Diseases	1.66	2.43	2.67	2.16
4. Diseases of the Blood and Bloodforming Organs	0.64	0.58	0.78	0.71
5. Mental Disorders	9.36	3.52	4.15	6.70
6. Diseases of the Nervous System and Sense Organs	3.33	4.40	3.39	3.42
7. Diseases of the Circulatory System	16.41	15.45	14.07	15.20
8. Diseases of the Respiratory System	7.36	8.88	11.10	9.39
9. Diseases of the Digestive System	11.14	12.78	12.02	11.65
10. Diseases of the Genitourinary System	7.04	7.97	6.82	6.95
11. Pregnancy, Childbirth and Puerperium	8.39	9.37	10.47	9.16
12. Diseases of the Skin and Subcutaneous Tissue	1.23	1.18	1.95	1.58
13. Diseases of the Musculoskeletal System	5.27	4.86	5.47	5.33
14. Congenital Anomalies	0.87	1.25	0.86	0.89
15. Certain Conditions Originating in the Perinatal Period	0.21	0.30	0.41	0.32
16. Symptoms, Signs and Ill-Defined Conditions	2.96	4.55	4.35	3.70
17. Injury and Poisoning	9.05	8.11	8.73	8.84
18. Factors Influencing Health Status & Contact with Health Services	2.37	1.63	2.87	2.54
TOTAL	100.00	100.00	100.00	100.00

Based on age and age-sex adjusted tables.

** Age-sex adjusted to 1981 Manitoba Population.

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

Chart VII-3 provides a quick overview of whether residents by region of residence are above or below the Manitoba average in each diagnostic code for age-sex adjusted patient days per 1,000 population. Except for two disease classifications, neoplasms and mental disorders, the residents of Winnipeg utilize fewer age-sex adjusted patient days per 1,000 population than the Manitoba average. From Table VII-6, however, it can be seen that these two classifications account for 11.6% and 9.4% of all the patient days utilized by residents of Winnipeg, for a total of 21.0%.

Brandon residents, however, are below the Manitoba average in only three classifications: mental disorders*, 34.5% below, factors influencing health status, 20.0% below, and diseases of the skin and subcutaneous tissue, 6.7% below. These three classifications, however, only account for 6.3% of the total patient days utilized by Brandon residents.

Rural residents, on the other hand, are below the Manitoba average in terms of age-sex adjusted patient days per 1,000 population in only two classifications: mental disorders and neoplasms, 28.1% and 3.6% below average respectively. Mental disorders represent 4.2% and neoplasms 8.3% of total patient days utilized by rural residents, for a total of 12.5%.

Perusal of Tables VII-7 to VII-9 shows that the age-sex adjusted separations rate per 1,000 population follows similar patterns. From Chart VII-4 and Table VII-8, however, it can be seen that there is greater variability in the separation rates than in the patient day rates.

Winnipeg residents, however, have an age-sex adjusted separation rate which is always below the Manitoba average. In fact, residents of Winnipeg have an age-sex separation rate which is 42.0% lower than for Brandon residents and 39.5% lower than for rural residents.

*Admissions to the Brandon Mental Health Centre for episodes involving psychiatric illness are not reported to the Manitoba Health Services Commission and are not reflected in these rates. This also applies to admissions to the Selkirk Mental Health Centre.

Chart VII-3

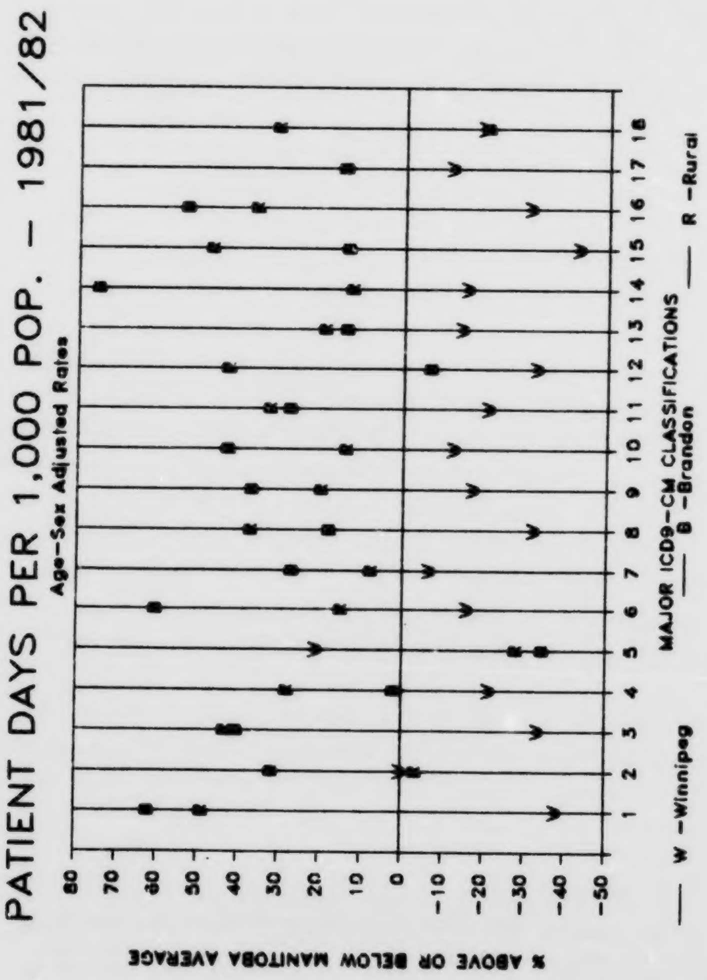

PATIENT DAYS PER 1,000 POP. — 1981/82
Age-Sex Adjusted Rates
% ABOVE OR BELOW MANITOBA AVERAGE
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
MAJOR ICD9-CM CLASSIFICATIONS
W -Winnipeg
B -Brandon
R -Rural

Chart VII-4

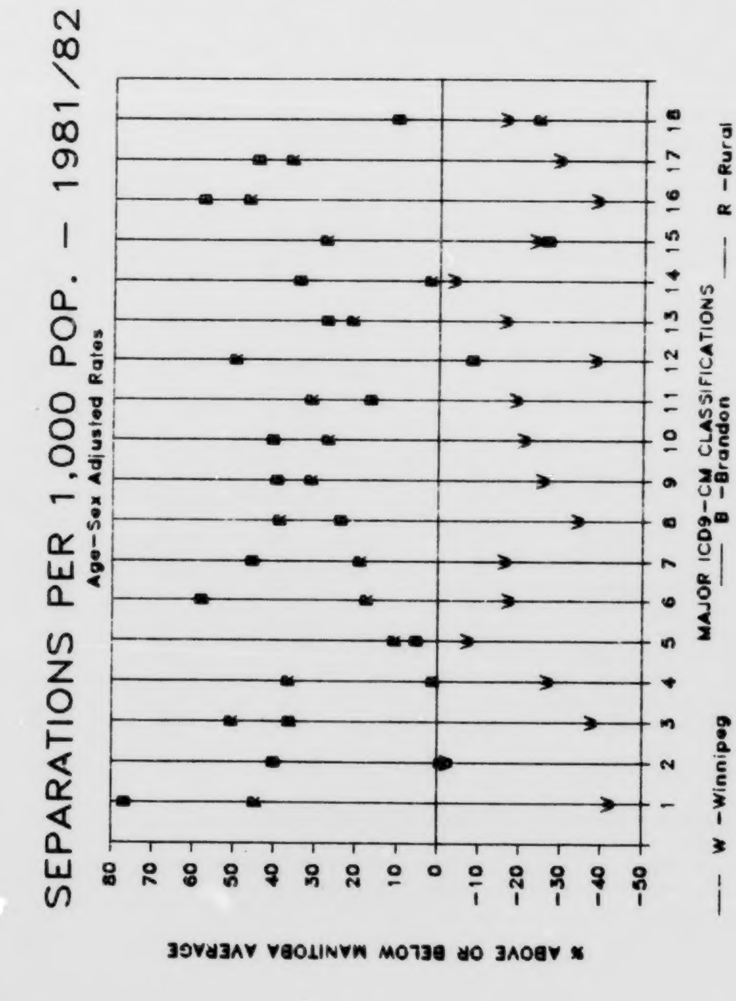

SEPARATIONS PER 1,000 POP. – 1981/82
Age-Sex Adjusted Rates
% ABOVE OR BELOW MANITOBA AVERAGE
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
MAJOR ICD9-CM CLASSIFICATIONS
W -Winnipeg
B -Brandon
R -Rural

TABLE VII-7

Total Separations per 1000 Population - 1981/81

Diagnostic Categories	** Age-sex adjusted rates by residence:			Actual rate
	Winnipeg	Brandon	Rural	Manitoba
1. Infectious and Parasitic Diseases	1.27	3.87	3.17	2.19
2. Neoplasms	8.34	11.97	8.45	8.55
3. Endocrine, Nutritional and Metabolic Diseases	1.51	3.30	3.64	2.42
4. Diseases of the Blood and Bloodforming Organs	0.68	0.94	1.27	0.93
5. Mental Disorders	5.48	6.21	6.53	5.91
6. Diseases of the Nervous System and Sense Organs	5.11	9.74	7.24	6.17
7. Diseases of the Circulatory System	13.44	23.34	19.10	16.05
8. Diseases of the Respiratory System	11.25	21.14	23.72	17.08
9. Diseases of the Digestive System	13.48	25.28	23.78	18.12
10. Diseases of the Genitourinary System	8.84	15.74	14.22	11.20
11. Pregnancy, Childbirth and Puerperium	18.50	26.62	29.89	22.81
12. Diseases of the Skin and Subcutaneous Tissue	1.34	1.99	3.25	2.17
13. Diseases of the Musculoskeletal System	5.39	8.19	7.79	6.43
14. Congenital Anomalies	1.35	1.88	1.43	1.40
15. Certain Conditions Originating in the Perinatal Period	0.36	0.34	0.60	0.47
16. Symptoms, Signs and Ill-Defined Conditions	5.11	13.11	12.19	8.31
17. Injury and Poisoning	9.37	19.13	18.05	13.23
18. Factors Influencing Health Status & Contact with Health Services	4.52	5.93	4.07	5.38
TOTAL	115.40	198.90	190.82	148.84

** Age-sex adjusted to 1981 Manitoba Population

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

TABLE VII-8

Total Separations per 1000 Population - 1981/82
Manitoba = 100.0

Diagnostic Categories	* age-sex adjusted rates by residence: Winnipeg	Brandon	Rural	Actual rate Manitoba
1. Infectious and Parasitic Diseases	58.0	176.7	144.7	100.0
2. Neoplasms	97.5	140.0	98.8	100.0
3. Endocrine, Nutritional and Metabolic Diseases	62.4	136.4	150.4	100.0
4. Diseases of the Blood and Bloodforming Organs	73.1	101.1	136.6	100.0
5. Mental Disorders	92.7	105.1	110.5	100.0
6. Diseases of the Nervous System and Sense Organs	82.8	157.9	117.3	100.0
7. Diseases of the Circulatory System	83.7	145.4	119.0	100.0
8. Diseases of the Respiratory System	65.9	123.8	138.9	100.0
9. Diseases of the Digestive System	74.4	139.5	131.2	100.0
10. Diseases of the Genitourinary System	78.9	140.5	127.0	100.0
11. Pregnancy, Childbirth and Puerperium	81.1	116.7	131.0	100.0
12. Diseases of the Skin and Subcutaneous Tissue	61.8	91.7	149.8	100.0
13. Diseases of the Musculoskeletal System	83.8	127.4	121.2	100.0
14. Congenital Anomalies	96.4	134.3	102.1	100.0
15. Certain Conditions Originating in the Perinatal Period	76.6	73.3	127.8	100.0
16. Symptoms, Signs and Ill-Defined Conditions	61.5	157.8	146.7	100.0
17. Injury and Poisoning	70.8	144.6	136.4	100.0
18. Factors Influencing Health Status & Contach with Health Services	84.0	110.2	75.7	100.0
TOTAL	77.5	133.6	128.2	100.0

** Age-sex adjusted to 1981 Manitoba Population

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

TABLE VII-9

Total Separations per 1000 Population - 1981/82
Percentage Distribution within Categories

Diagnostic Categories	Winnipeg %	Brandon %	Rural %	Manitoba %
1. Infectious and Parasitic Diseases	1.10	1.95	1.66	1.47
2. Neoplasms	7.23	6.02	4.43	5.74
3. Endocrine, Nutritional and Metabolic Diseases	1.31	1.66	1.91	1.63
4. Diseases of the Blood and Bloodforming Organs	0.59	0.47	0.67	0.62
5. Mental Disorders	4.75	3.12	3.42	3.97
6. Diseases of the Nervous System and Sense Organs	4.43	4.90	3.79	4.15
7. Diseases of the Circulatory System	11.65	11.73	10.01	10.78
8. Diseases of the Respiratory System	9.75	10.63	12.43	11.48
9. Diseases of the Digestive System	11.68	12.71	12.46	12.17
10. Diseases of the Genitourinary System	7.66	7.91	7.45	7.52
11. Pregnancy, Childbirth and Puerperium	16.03	13.38	15.66	15.33
12. Diseases of the Skin and Subcutaneous Tissue	1.16	1.00	1.70	1.46
13. Diseases of the Musculoskeletal System	4.67	4.12	4.08	4.32
14. Congenital Anomalies	1.17	0.95	0.75	0.94
15. Certain Conditions Originating in the Perinatal Period	0.31	0.17	0.31	0.32
16. Symptoms, Signs and Ill-Defined Conditions	4.43	6.59	6.39	5.58
17. Injury and Poisoning	8.12	9.62	9.46	8.89
18. Factors Influencing Health Status & Contact with Health Services	3.92	2.98	2.13	3.61
TOTAL	100.0	100.00	100.00	100.00

Based on age and age-sex adjusted tables

** Age-sex adjusted to 1981 Manitoba Population

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

The residents of Brandon have lower age-sex adjusted separation rate in two classifications: diseases of the skin and subcutaneous tissue and certain conditions originating in the perinatal period. These two classifications represent 1.0% and 0.2% respectively of total separations by residents of Brandon. Their impact on the total age-sex adjusted separations rate is therefore minimal.

Rural residents also have a lower age-sex adjusted separation rate when compared to the Manitoba average in two classifications: neoplasms and factors influencing health status, 1.2% below and 24.3% below respectively. Neoplasms represent 4.4% of total separations by rural residents and factors influencing health status represent 2.1%, for a total of 6.5%.

The residents of Winnipeg are hospitalized less often than residents of Brandon or residents of rural Manitoba.

However, it can be seen from Tables VII-10 and VII-11 that the residents have an average length of stay that is 11.8% higher than the Manitoba average. The residents of Winnipeg have an average length of stay that is 19.6% higher than Brandon residents and 23.4% higher than rural residents.

Winnipeg residents have lower average length of stays compared to the Manitoba average in pregnancy, childbirth and puerperium, 2.3% below, congenital anomalies, 12.3% below, certain conditions originating in the perinatal period, 25.3% below, and factors influencing health status and contact with health services, 3.7% below.

Brandon residents generally have lower average length of stays when compared to the Manitoba average. There are three exceptions with a length of stay that are higher by more than 3.0% points: pregnancy, childbirth and puerperium, 9.3% above, congenital anomalies, 30.3% above, and certain conditions originating in the perinatal period, 55.1% above.

Rural residents also have a lower average length of stay when compared to the Manitoba average. However, there are three exceptions with lengths of stay that are higher by more than 3.0%: congenital anomalies, 10.2% above, certain conditions originating in the perinatal period, 15.1% above, and factors influencing health status and contact with health services, 73.3% above.

TABLE VII-10

Total Average Length of Stay - 1981/82

Diagnostic Categories	** Age-sex adjusted rates by residence:			Actual rate
	Winnipeg	Brandon	Rural	Manitoba
1. Infectious and Parasitic Diseases	7.28	6.23	6.97	6.80
2. Neoplasms	12.97	11.86	12.32	12.63
3. Endocrine, Nutritional and Metabolic Diseases	10.24	9.87	9.14	9.60
4. Diseases of the Blood and Bloodforming Organs	8.79	8.26	7.68	8.19
5. Mental Disorders	15.89	7.59	7.92	12.17
6. Diseases of the Nervous System and Sense Organs	6.06	6.06	5.84	5.96
7. Diseases of the Circulatory System	11.37	8.87	9.19	10.17
8. Diseases of the Respiratory System	6.09	5.63	5.83	5.91
9. Diseases of the Digestive System	7.69	6.78	6.30	6.91
10. Diseases of the Genitourinary System	7.41	6.78	5.98	6.67
11. Pregnancy, Childbirth and Puerperium	4.22	4.72	4.37	4.32
12. Diseases of the Skin and Subcutaneous Tissue	8.54	7.96	7.47	7.82
13. Diseases of the Musculoskeletal System	9.11	7.95	8.75	8.90
14. Congenital Anomalies	5.98	8.88	7.51	6.81
15. Certain Conditions Originating in the Perinatal Period	5.53	11.49	8.53	7.40
16. Symptoms, Signs and Ill-Defined Conditions	5.39	4.65	4.45	4.79
17. Injury and Poisoning	8.99	5.69	6.03	7.18
18. Factors Influencing Health Status & Contact with Health Services	4.88	3.68	8.79	5.07
TOTAL	8.06	6.74	6.54	7.22

** Age-sex adjusted to 1981 Manitoba Population

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

TABLE VII-11

Total Average Length of Stay - 1981/82
Manitoba = 100.0

Diagnostic Categories	** Age-Sex adjusted rates by residence: Winnipeg	Brandon	Rural	Actual rate Manitoba
1. Infectious and Parasitic Diseases	107.01	91.59	102.58	100.00
2. Neoplasms	102.73	93.91	97.54	100.00
3. Endocrine, Nutritional and Metabolic Diseases	106.66	102.79	95.22	100.00
4. Diseases of the Blood and Bloodforming Organs	107.33	100.75	93.70	100.00
5. Mental Disorders	130.58	62.38	65.11	100.00
6. Diseases of the Nervous System and Sense Organs	101.64	101.58	97.94	100.00
7. Diseases of the Circulatory System	111.78	87.26	90.36	100.00
8. Diseases of the Respiratory System	103.07	95.32	98.78	100.00
9. Diseases of the Digestive System	111.35	98.13	91.29	100.00
10. Diseases of the Genitourinary System	111.22	101.76	89.74	100.00
11. Pregnancy, Childbirth and Puerperium	97.77	109.30	101.26	100.00
12. Diseases of the Skin and Subcutaneous Tissue	109.20	101.72	95.51	100.00
13. Diseases of the Musculoskeletal System	102.34	89.39	98.40	100.00
14. Congenital Anomalies	87.72	130.28	110.22	100.00
15. Certain Conditions Originating in the Perinatal Period	74.66	155.14	115.14	100.00
16. Symptoms, Signs and Ill-Defined Conditions	112.54	97.15	92.93	100.00
17. Injury and Poisoning	125.14	79.18	84.05	100.00
18. Factors Influencing Health Status & Contact with Health Services	96.27	72.48	173.30	100.00
TOTAL	111.76	93.39	90.59	100.00

** Age-sex adjusted to 1981 Manitoba Population

Source: Manitoba Health Services Commission Reports.
Statistics Canada Population Data.

Generally speaking, the residents of Winnipeg utilize hospitals at a lower rate than residents in Brandon and rural Manitoba. However, once hospitalized, the residents of Winnipeg have an average length of stay which is substantially higher than that of the residents of Brandon and rural Manitoba.

VII-5 TEN ICD9-CM CLASSIFICATIONS WITH THE LARGEST CONCENTRATION OF PATIENT DAYS UTILIZED

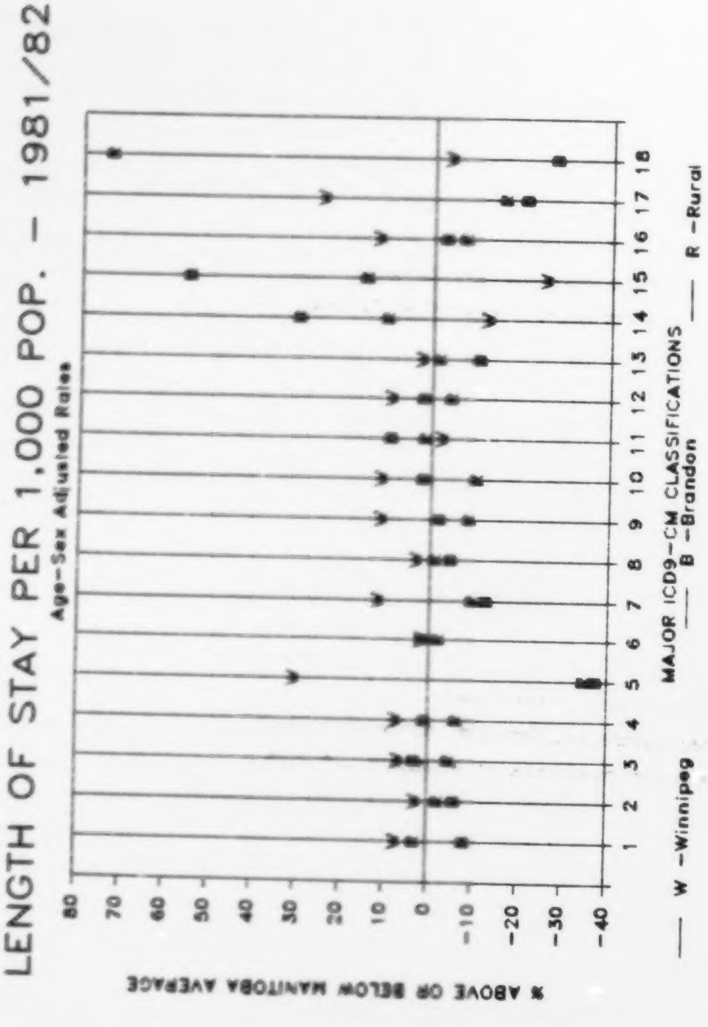
The data provided in Table VII-12 exclude Status Indians and represent 93.0% of the patient days utilized by Manitoba residents. These ten disease categories are those which comprise the largest concentration of patient days (excluding normal delivery 650-659) and represent 35.9% of total patient days utilized. The ranking of these ten disease categories can be seen in Table VII-12 as well as the total number of patient days, separations and the average length of stay associated with each, for Winnipeg, Brandon, rural Manitoba and all of Manitoba.

The rankings will be described individually; only the major differences will be highlighted. In the category (480-487) pneumonia and influenza, Manitoba residents rank in 17th place, compared to 10th place for residents of Brandon and 6th place for rural residents. However, the average length of stay for Winnipeg residents is 22% and 32% longer than for residents of Brandon and rural Manitoba, respectively.

In the category (295-299) other psychoses, Brandon residents ranked in 31st place, compared to 2nd place for residents of Winnipeg and 25th place for rural residents. Winnipeg residents had an average length of stay of 22.9 days which is 81.7% higher than for Brandon residents and 74.8% higher than for rural residents. Psychotic mental disorders (300-316) ranked in 6th place for residents of Winnipeg, 17th for residents of Brandon and 10th for residents of rural Manitoba. Again the average length of stay for Winnipeg residents was substantially higher than for residents of Brandon and rural Manitoba.

For these ten disease categories the residents of Winnipeg had an average length of stay which, at 11.0 days, was 39% and 45% greater

Chart VII-5



LENGTH OF STAY PER 1,000 POP. — 1981/82

Age-Sex Adjusted Rates

TABLE VII-12

Ranking by Patient Days Utilized of Ten ICD9-CM Diseases for 1981/82

	Ranked by Patient Days Utilized:				Patient Days:				Separations:				Average Length of Stay			
	Manitoba	Winnipeg	Brandon	Rural	Manitoba	Winnipeg	Brandon	Rural	Manitoba	Winnipeg	Brandon	Rural	Manitoba	Winnipeg	Brandon	Rural
Ischemic Heart Disease (410-414)...........	1	1	1	1	63,042	36,867	3,567	22,608	6,179	3,300	400	2,479	10.2	11.2	8.9	9.1
Fractures (800-829)........	2	3	5	5	43,664	25,097	1,771	16,796	4,143	2,003	196	1,944	10.5	12.5	9.0	8.6
Other Diseases of Digestive System (570-579)..................	3	4	2	3	43,389	22,781	2,440	18,168	4,656	2,263	230	2,163	9.3	10.1	10.6	8.4
Other Psychoses (295-299)..................	4	2	31	25	37,176	29,444	567	7,165	1,878	1,286	45	547	19.8	22.9	12.6	13.1
Symptoms (780-789).........	5	9	3	2	34,909	13,946	2,019	18,944	7,461	2,700	439	4,322	4.7	5.2	4.6	4.4
Other Forms of Heart Disease (420-429)..................	6	8	4	4	33,671	14,108	1,807	17,756	3,502	1,351	205	1,946	9.6	10.4	8.8	9.1
Chronic Obstructive Pulmonary Disease & Al. Cond. (490-496)........	7	5	6	7	32,010	15,337	1,718	14,955	4,188	1,795	250	2,143	7.6	8.5	6.9	7.0
Cerebrovascular Disease (430-438)...........	8	7	8	9	27,802	15,188	1,433	11,181	2,204	1,055	148	1,001	12.6	14.4	9.7	11.2
Neurotic Disorders, Personality Disorders, and Other Non-Psychotic Men. Dis. (300-316)........	9	6	17	10	26,253	15,151	992	10,110	2,888	1,229	158	1,501	9.1	12.3	6.3	6.7
Pneumonia and Influenza (480-487)........	10	17	10	6	26,058	9,485	1,173	15,400	3,153	961	144	2,048	8.3	9.9	8.1	7.5
Arthropathies and Related Disorders (710-719)..................	11	10	20	8												
					Sub-totals				Sub-totals				Sub-totals			
					367,974 35.9	197,404 37.7	17,487 34.4	153,083 34.1	40,252 29.0	17,943 27.6	2,215 30.3	20,094 30.2	9.1	11.0	7.9	7.6
Other Disorders of Female Genital Tract (617-629)............	13	13	7	14												
					Remainder				Remainder				Remainder			
					655,728 64.1	326,459 62.3	33,395 65.6	295,874 65.9	98,575 71.0	47,089 72.4	5,094 69.7	46,392 69.8	6.7	6.9	6.6	6.4
Malignant Neoplasm of Digestive Organs and Peritoneum (150-159).......	12	11	9	16												
					Totals				Totals				Totals			
					1,023,702 100.0	523,863 100.0	50,882 100.0	448,957 100.0	138,827 100.0	65,032 100.0	7,309 100.0	66,486 100.0	7.4	8.1	7.0	6.8

than for the residents of Brandon and rural Manitoba, respectively. The variability in the average length of stay is the greatest for these ten disease categories. From Table VII-12 it can be seen that the remainder of the disease categories show little variability. Winnipeg residents still had the longest average length of stay at 6.9 days but this compares with 6.6 days for Brandon residents and 6.4 days for rural residents. This is a variability of only 4.5% to 7.8%, yet these remaining categories represent 64% of total patient days and 71% of total separations.

VII-6 HOSPITAL BED NUMBERS BASED ON VARIOUS UTILIZATION FACTORS

The various measures of hospital utilization examined above can be used to determine the impact on hospital utilization of several different assumed scenarios. Data in Table VII-13 shows the age-sex adjusted number of beds utilized by the residents of Winnipeg, Brandon and rural Manitoba based on a 75% occupancy rate. A 75% occupancy rate is chosen in order to take into account the lower occupancy rates of rural hospitals.

Winnipeg residents utilize 3.4 beds per 1,000 population on an age-sex adjusted basis compared to 4.9 for Brandon residents and 4.6 for rural residents. Winnipeg residents utilize 30.6% fewer beds per 1,000 population than Brandon residents and 25.4% fewer beds than residents of rural Manitoba.

Using the separation rate of Winnipeg residents, 115.4 per 1,000 population, and the average length of stay of rural residents, 6.5 days, an estimate of the bed numbers that would be utilized by the Manitoba population can be made. In this case the beds per 1,000 population that would be utilized would be 2.8 per 1,000 population, a reduction of 29.8% over the actual number utilized of 3.9 per 1,000 population.

On the other hand, if the separation rate of Brandon residents were utilized, 198.9 per 1,000 population, and the average length of stay of Winnipeg residents, 8.1 days, this would result in a bed utilization of 5.9 beds per 1,000. This is an increase of 49.2% over the actual number of beds presently utilized.

TABLE VII-13

Age-sex Adjusted Beds Utilized by the Residents of Each Region based on a 75.0% Occupancy Rate

RESIDENTS OF:	SEP/1000	POPULATION	ALS	SEP	BEDS	BEDS PER 1000 POP	INDEX
Winnipeg:	115.4	570,845	8.06	65,876	1,940	3.40	86.6
Brandon:	198.9	36,240	6.74	7,208	177	4.90	124.8
Rural:	190.8	419,160	6.54	79,976	1,911	4.56	116.1
Manitoba:	148.8	1,026,245	7.22	152,705	4,028	3.92	100.0

Scenario Utilizing Lowest and Highest Utilization Rates And Manitoba Population

Lowest rates:	115.4	1,026,245	6.54	118,429	2,829	2.76	70.2
Highest rates:	198.9	1,026,245	8.06	204,120	6,010	5.86	149.2
Lowest Separations Rate Average ALS	115.4	1,026,245	7.22	118,429	3,123	3.04	77.6
Winnipeg Separations Rate Winnipeg ALS	115.4	1,026,245	8.06	118,429	3,487	3.40	86.6

If the lowest separation rate, 115.4 per 1,000 population, is combined with the actual average length of stay for all residents of Manitoba, 7.2 days, the bed utilization would be 3.0 beds per 1,000 population, a reduction of 22.4%.

Using Winnipeg residents as a model, in that they have geographical access to all the major hospitals in the province as well as to physicians in all of the specialties, the number of beds utilized would fall to 3.4 per 1,000 population, a drop of 13.4% over the present average of 3.9 beds per 1,000 population. Therefore, if the hospitalization rates of Winnipeg residents could be achieved across the province and coupled with their higher average length of stay of 8.1 days, higher than the Manitoba average by 11.6%, it would still be possible to reduce the use of hospitals in Manitoba by some 13.0%.

The data in this chapter is highly significant, but its significance may require some interpretation. In particular, it is recognized that this is only the latest in a long sequence of reports stretching over at least two decades, documenting substantial variations across regions and populations in per capita utilization of particular medical, hospital, or other health care services. A number of these have been carried out in Manitoba. Some have made strong contributions to the world-wide research literature and to our understanding of the determinants of health care utilization; others, because of different emphasis and interpretation, have become embroiled in controversy such that they were discredited by association and their true significance was obscured. The latter is always a risk when attempting to draw policy inferences from such data, because policy is by its nature a challenge.

Initially, it should be recognized that these results are considerably more precise than those in some previous studies. In the first place, it is universally recognized that since hospital utilization rates averaged across groups of people are so sensitive to demographic structure, legitimate comparison of populations can only be made on an age-sex adjusted basis. This adjustment has been done more thoroughly than in previous studies. Newborns have been excluded from the data and adjustment has been carried out by five year age groups up to 85+.

Appropriate weight has been given to the very large variation within the over 65 population, which in some studies is treated as a homogeneous block of "the elderly", and as a result, this age-sex adjustment is accordingly more sensitive to differences in demographic structure across the populations when compared to some previous investigations.

Second, as emphasized at the beginning of this Chapter, it is clear from the data on lengths of stay of hospital cases, that in Manitoba (and probably elsewhere as well), there are large numbers of nominally "acute care" hospital days accumulated by a very small number of persons who are de facto long-term care patients. This is no surprise to clinicians who have been pointing this out for some time in various ways. But it does mean that any inter-regional comparison of hospital utilization must deal in some way with the possibility that de facto long-term cases represent different proportions of the patient day load in different regions. To focus solely on cases with lengths of stay of 59 days or less is not a perfect response to this problem, but it does mean that the data examined in fact refer almost entirely to genuine acute care hospitalization, and that very little such care has been excluded, since 95.9% of all cases separated from Manitoba hospitals are included in the analysis of data.

In short, there is a very large difference in volume of hospital days used by different populations of Manitobans. Brandon residents used forty-four percent more hospital days per capita, age-sex adjusted, than did Winnipeggers in 1981/82, and rural residents used thirty-four percent more. The difference in separation rates was even more startling--72.4% and 63.4% greater respectively. Why?

The first point to be emphasized is that these differences do not represent an implicit criticism of the hospital, administrators or of physicians. It has often been claimed that admissions to rural hospitals are a good deal less rigorous than in Winnipeg. That may or may not be so, but it must be emphasized that the data in this Chapter refer to hospital utilization anywhere in the province by residents of a particular region, not to hospitalization provided in a particular group of hospitals. A high proportion of the hospital care received by rural residents is in Winnipeg hospitals (see Chapter VIII). Moreover the differences here reported are not specific to any small region or local area. They represent a major difference across populations which each number over half a million people. Within those groups there are undoubtedly sub-groups with even larger variations; the point here is that we are dealing with a very large and systematic difference in pattern dividing the province virtually in half.

Although it would, therefore, be a misinterpretation of the findings to use them as a basis for praise or criticism, nevertheless it would be equally erroneous to dismiss them as in some sense "normal variations" in medical practice in an uncertain world, or alternatively (as is common in cross-national comparisons) to point out that if there are systematic differences, that does not in and of itself establish whether one area is "too low" or another "too high". If surgery rates in the United States are two to three times those in the U.K., for example, is that U.S. "overservicing" or U.K. "underservicing"? But here we are dealing with a single province, with populations whose service use flows back and forth across rural/urban boundaries, and which is served by members of the same medical community, with (for the most part) shared training and traditions.

Moreover, there is direct evidence, even if rather negative. There does not appear to be any objective indication that the health of Winnipeggers is suffering, relative to that of rural residents, despite the massive difference in relative utilization rates. Indeed, if there were, it would be a rather surprising commentary on the admission priorities of the Winnipeg hospitals which provide so much of the care for rural residents! It may well be that Winnipeg physicians are finding hospital access increasingly difficult. Given the numbers quoted in the beginning of this Chapter of a steady increase in physician supply per capita in Winnipeg and a steady fall in beds available for de facto acute care patients; it would be amazing if this were otherwise. But there is no evidence to suggest that the very large differences in hospital utilization between Winnipeg and the rural areas have led to any associated difference in health outcomes.

These observations are consistent with the proposition that hospital utilization patterns, at least within the ranges currently observed, are not particularly closely linked to the needs of the population served, but rather, are determined by the habits, preferences, and culture of the local community. This is not a new finding; there is extensive evidence from studies in other jurisdictions that patterns of hospital use are primarily determined by the availability of bed capacity, apparently independent of any measure of population needs. Other studies have found that use patterns are linked to the beliefs and predilections of particular physicians, and still others that they are stongly affected by the form of organization and payment of medical practice. Again, some very good work along these lines has already been done by investigators in Manitoba.

But the significance of the observations is that they show the scale of impact, at the aggregate level, of such cross-regional variations within a single province, and thus indicate their significance for the planning of facilities and capacity. If present patterns of use are to a large extent conventional, or even habitual, rather than rooted in the objectively defined health care needs of the population served, then it seems indefensible to take them as the basis for future facility planning, or indeed to base proposals for further expansion on claims of "need" which are either unsubstantiated or substantiated by reference to currently observed utilization patterns. It is also extremely expensive. If effective use is to be made of the very large quantity of resources which Manitobans contribute to the provision of health care, one must rather ask, on what factors are current patterns of use based and could they be made more effective?

A comprehensive evaluation of current patterns of hospital utilization in Manitoba would be well beyond a single report, much less one with the resources (human as well as economic) of this one. Moreover, such an evaluation would have to be carried out in co-operation with the clinical community, not only because that would provide the only hope of reaching consensus, but also because in order to be effective for policy purposes it would require the credibility and commitment which follows from co-operation. Nevertheless, subsequent Chapters of this report will point out some of the forms of evidence currently available which bear on this issue. These will also identify some of the specific policy directions, the changes in patterns of health care delivery and organization, which are currently showing promise of substantial improvement in the effectiveness of use of acute care beds. The problem is how to disseminate these promising developments, and how to expand and accelerate the process of identifying such alternatives?

Before leaving the aggregate data on in-patient utilization, however, it is important to rule out a line of argument which would discount their significance, as well as to indicate how such data might be used, at least in more detailed form, to assist the process of targeting changes in policy and/or clinical behaviour.

One might be tempted to suggest that, although the populations compared have been adjusted to remove any confounding effects of age and sex structure, nevertheless there are other systematic differences between rural and urban populations which imply differences in "needs" for in-patient care. Such an argument would, therefore, undermine the interpretation that these very large observed variations in utilization patterns which represent different conventions of medical practice.

One might argue, for example, that the isolation of rural populations, and the difficulties of getting to care in the event that condition takes a sudden and unexpected turn of events, requires a more conservative style of practice and more "preventive" hospitalization. To this suggestion there are several possible responses. First, the "isolation" of the rural environment, while real, is relative, and has been dramatically reduced from that of two, or even one, generation ago by the speed and reliability of present means of transportation and communication. And the resources available in rural areas have greatly increased. The image of the isolated farmhouse cut off from civilization or help is from another era. Moreover, a very large proportion of the Manitoba "rural" population in fact lives in small or even quite large towns. And finally, how does the "rural isolation" story explain the patterns in Brandon where hospital utilization is even higher than in rural Manitoba? The Brandon population is, of course, only one-tenth of that of Winnipeg or of the rural communities, so its impact on province-wide utilization patterns is not large. But it is an urban centre with a sophisticated range of medical services and a population of over 35,000. If patterns of utilization in rural Manitoba were explained by "isolation" and preventive admissions, then rates in Brandon should be very similar to those in Winnipeg. They are 44% above, for patient days per capita, and 72.4% above for separations!

Yet another possible explanation might be the influence of the Native population, which is known to experience substantially higher levels of ill-health, and correspondingly higher levels of hospital utilization. In making comparisons among small areas, and especially for particular age groups or illnesses, one would have to take account of differing proportions of Status Indian and other Manitobans in the regions being compared. But at the level of aggregation presented here, the Native population is too small to affect the results. (Specific computer tabulations have been carried out to check this conclusion). And in any case, the whole Native population is not located outside Winnipeg.

Further, one might ask if population-based data might be biased by the migration of patients to take advantage of the availability of services. Patients with chronic conditions might find it worthwhile to move to the community where care facilities are available. Such migration could indeed distort studies of the epidemiology of rare and chronic illnesses, and would require some correction. But in the present context they would tend to overstate utilization in Winnipeg, relative to the rural communities of Manitoba. It may be that the higher rates of patient days per capita in Winnipeg for mental disorders, where Winnipeg use is 68.3% above that in rural areas, represents this sort of migration phenomenon, since admissions are in fact lower in Winnipeg. It suggests that some of the longer stay cases may have moved their residences. But this behaviour would lead to our reported differential being an understatement.

At the end of the day, of course, there is no way of excluding the possibility of an omitted variable(s) from a comparison which is not based on a randomized controlled trial. (For that matter, such variables are not excluded by the randomized controlled trial methodology either, just made very unlikely). But if one uses the possibility of such confounding effects as an excuse for disregarding data of the sort reported in this Chapter, one is effectively denying the legitimacy of any such comparisons. All research is an exercise in the control and limitation of uncertainty; to reject its results on the basis that there can never be perfection, is to make the (ideal, not the realizable) best of the enemy of the good, and in effect to advocate implicit planning on the basis of ignorance rather than using the admittedly imperfect information which is available. The burden of proof should be on those who would reject such data as are presented above, to identify quantitatively any biasing factors which may have been excluded, and to show that they would change the conclusions.

The comparative data in this Chapter are, however, at too highly aggregated a level to provide much guidance for a clinical or a policy response. As noted above, subsequent Chapters will go into more detail as to the sorts of programs which might be an effective response. But the finding of a 34% difference in total utilization can at best point beyond itself, to further and more detailed questions.

Among those questions, however, might be investigations into the fine structure of comparative utilization by illness category and age-sex class. The finding in this Chapter that rural populations used twice as many in-patient days for diseases of the respiratory system, per capita, age-sex adjusted, and excluding long-term care, should be a bit startling. But when this utilization is broken into components, the differences are concentrated most heavily in the pediatric age groups and the illness categories "acute respiratory infections" I.C.D. Classes 460-466 and "pneumonia and influenza" I.C.D. Classes 480-487. For children ages 0-14 (excluding Status Indians) the rural population in

1981/82 used 5,347 patient days for "acute respiratory infections" or 4.76 patient days per 1000 (child) population. This was four times the Winnipeg rate of 1.16 days per thousand, or 1,375 days. For "pneumonia and influenza", rural children used 3,805 hospital days or 3.39 per thousand, compared with 1,144 days or 0.97 per thousand in Winnipeg. Nor were these relative differentials concentrated in the age groups 0-1 and perhaps 1-4, which might be considered particularly at risk and justifying "preventive" hospitalization. While it is true that these age groups account for most hospitalization of children for respiratory problems, in both areas the rate of utilization for "acute respiratory infections" among rural children aged 10-14 was also four times the Winnipeg rate, and for "pneumonia and influenza", six times. At this level of detail, a clinician would surely have some very specific questions. It is difficult to believe that differentials of such magnitude represent underlying differences in population needs for care; and if they do, then there is a public health problem of considerable magnitude and urgency in rural communities.

If rural pediatric hospital utilization in these two categories could have been brought down to the Winnipeg rate, 6,760 in-patient days would have been saved in 1981/82. While small relative to the overall scale of hospitalization in Manitoba, this patient day load is still equivalent to the output of a 23 bed hospital at 80.0% occupancy. At $242.27 per patient day (the average expenditure for Manitoba in 1981/82),* this additional pediatric load would have cost $1.64 million. This computation should not be taken too seriously, as the cost per patient day for a child with a respiratory infection in a rural hospital is well below the provincial average which includes ICU care in the Winnipeg teaching hospitals. Still, pediatric care is usually more expensive than adult care, especially in the younger age groups, because of the extra nursing required. But assuming costs per day of one-third the provincial average, such use still costs an additional half-million dollars, and the "correct" figure is probably in the neighbourhood of one million.

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*Source Manitoba Health Services Commission Annual Report 1981/82

As noted above, the detailed analysis of regional differentials in 117 illness categories and 40 age-sex categories seemed inappropriate for a project such as this one. But such very specifically targeted comparative data would provide a natural starting point for efforts to evaluate, in co-operation with clinical specialists, current patterns of hospital utilization and proposals for change.

CHAPTER VIII

COMPARISON OF HOSPITAL UTILIZATION IN MANITOBA FOR 1971/72 AND 1981/82

VIII-1 AGGREGATE HOSPITAL UTILIZATION BY REGION OF USER

The data in this chapter have been assembled using different definitions from those in Chapter VII in order to be able to make comparisons between 1971/72 and 1981/82. The data were defined as follows:

1) exclude newborns;
2) exclude any patients in hospitals designated "Extended Treatment Only";
3) exclude patients who were Status Indians;
4) utilize M.H.S.C.'s population data excluding Status Indians; and,
5) include only patient days incurred during the fiscal year in order to eliminate the impact of an unusual number of separations by long-term patients in a region with few beds.

The main differences between the data provided in Chapter VII and Chapter VIII are as follows:

1) data in Chapter VII also excluded patients with a length of stay in excess of 59 days and patients who were in long-term units within acute care hospitals. These types of patients could not be identified for the year 1971/72, therefore, to ensure compatibility with 1981/82 they were included in the 1981/82 data;
2) data in Chapter VII excluded patients with a length of stay in excess of 59 days whereas data in Chapter VIII does not exclude them; and
3) Statistics Canada was the source of population data for Chapter VII whereas M.H.S.C. population data were used in Chapter VIII due to the accessibility of the data on a regional basis.

The above caveats have been provided to point out that the data in Chapters VII and VIII are not precisely comparable due to limitations of the data base.

Data in Table VIII-1 permit comparison of hospital utilization over a ten year period from 1971/72 to 1981/82. Of particular interest is the decrease in the patient days per 1,000 population for Manitoba as a whole, a drop of 2.8% over ten years. This drop, however, was not uniformly distributed across the province. In fact two locations stand out as having increased their hospital utilization during the ten years, namely Winnipeg and Brandon.

Winnipeg residents showed an increase in age-sex adjusted patient days per 1,000 population of 3.2% but this was on a 1971/72 base of 1,318.2 which was the lowest in the province and remained the lowest in 1981/82 in spite of the declines occurring in other regions.

The residents of Brandon showed an increase in their age-sex adjusted patient days per 1,000 population of 37.4% over the ten years. From a base of 1,344.3 patient days per 1,000 population in 1971/72, which was some 2.0% above the utilization rate for Winnipeg residents, their utilization rate in 1981/82 at 1,847.1 is now 35.8% higher than for the residents of Winnipeg and second only to the Norman region at 2,040.1 patient days per 1,000 population.

The residents of the Westman region, excluding the residents of Brandon, showed a decline in their hospital utilization of 2.9% over ten years and now have a utilization rate which is 10.0% lower than for the residents of Brandon. This compares to a rate of 27.0% higher than the Brandon rate in 1971/72. Again the reason is that Brandon's utilization has increased dramatically over the ten years.

Over the ten years the residents of the Norman region remain the highest utilizers of hospital services in the province though the gap between them and the lowest utilizers, the residents of Winnipeg, diminished from being 88.9% higher in 1971/72 to 50.0% higher in 1981/82.

VIII-2 INTER-REGIONAL FLOW OF HOSPITAL PATIENTS: HOSPITAL UTILIZATION BY RESIDENCE OF PATIENT AND BY LOCATION OF SERVICE

Information provided in Table VIII-2 illustrate the distribution of hospital care that residents of a particular region receive in their region and in other regions.

TABLE VIII-1

Hospital Patient Days Per 1,000 Population, for Residents of Manitoba, by Regions and Selected Locations Age-Sex Adjusted Utilizing MHSC Population Data

Region of User	1971/72	1981/82	Percent Change
Central	1,682.1	1,483.9	-11.8
Eastman	1,678.9	1,449.9	-13.6
Interlake	1,621.1	1,387.5	-14.4
Norman	2,489.6	2,040.1	-18.1
Parkland	1,775.7	1,664.1	-6.3
Westman	1,609.6	1,705.8	6.0
Winnipeg	1,318.2	1,360.0	3.2
Manitoba	1,513.0	1,470.4	-2.8
Manitoba exc. Winnipeg	1,772.7	1,625.7	-8.3
Brandon	1,344.3	1,847.1	37.4
Westman exc. Brandon	1,705.8	1,657.0	-2.9

Source: Manitoba Health Services Commission.

TABLE VIII-2

Percentage of Acute Care Hospital Patient Days by Residence of User and by Location of Service Age-sex Adjusted to Manitoba Health Services Commission Population Data

Region of Patient	Region of Service Central	Eastman	Interlake	Norman	Parkland	Westman	Winnipeg	Out of Province	Total
Central									
1971/72	66.6	0.6	0.1	0.1	0.8	3.6	27.6	0.7	100.0
1981/82	67.3	0.3	0.1	0.3	0.1	3.1	27.7	1.1	100.0
Eastman									
1971/72	3.2	47.8	2.8	0.1	0.1	0.3	42.6	3.2	100.0
1981/82	1.2	51.6	1.4	0.1	0.0	0.1	43.1	2.5	100.0
Interlake									
1971/72	0.2	0.7	56.4	0.1	0.2	0.3	40.7	1.4	100.0
1981/82	0.2	0.8	49.2	0.2	0.4	0.1	47.8	1.2	100.0
Norman									
1971/72	1.1	1.6	1.3	61.6	11.7	0.8	19.6	2.2	100.0
1981/82	0.1	1.5	1.1	61.2	5.9	0.3	27.7	2.2	100.0
Parkland									
1971/72	1.0	0.1	0.1	0.3	66.2	12.8	17.7	1.8	100.0
1981/82	0.6	0.0	0.1	0.6	67.4	10.5	17.1	3.7	100.0
Westman									
1971/72	1.1	0.1	0.1	0.1	0.8	81.5	14.1	2.3	100.0
1981/82	1.0	0.0	0.1	0.2	0.5	85.6	10.8	1.9	100.0
Winnipeg									
1971/72	0.2	0.2	0.2	0.1	0.1	0.2	97.0	2.0	100.0
1981/82	0.3	0.2	0.3	0.1	0.2	0.3	96.8	1.8	100.0
Non-resident									
1971/72	1.8	0.8	0.5	25.2	3.1	5.6	63.1	0.0	100.0
1981/82	1.2	0.6	0.5	25.0	1.8	6.0	64.6	0.3	100.0
Manitoba									
1971/72	6.9	3.1	3.6	6.2	5.6	12.6	60.1	1.9	100.0
1981/82	6.4	3.1	2.9	4.1	4.9	14.3	62.5	1.8	100.0

Source: Manitoba Health Services Commission

Over this ten year period the residents of Eastman, Interlake and Westman showed some changes in the percentage of their residents receiving hospital services within their regions. The residents of Eastman received an additional 3.8% of their hospital services in their region over the ten years, from 47.8% to 51.6%. This increase was at the expense of the other regions except for the Winnipeg region which showed a slight increase of 0.5% in hospital services, from 42.6% in 1971/72 to 43.1% in 1981/82.

On the other hand residents of the Interlake saw a reduction in the percentage of hospital services received from within their region from 56.4% in 1971/72 to 49.2% in 1981/82, a decrease of 7.2%. The residents of the Interlake received an increasing percentage of their hospital care in Winnipeg, from 40.7% in 1971/72 to 47.8% in 1981/82, an increase of 7.1%.

The residents of Westman saw an increase in the percentage of hospital services received within their region, an increase from 81.5% in 1971/72 to 85.6% in 1981/82. This increase in the percentage of residents receiving hospital care within the region was at the expense of hospital care in Winnipeg which dropped from 14.1% to 10.8% of hospital services received by residents of Brandon over the ten years.

The residents of Norman continued to receive the same percentage of their hospital care in their region over the ten years, but shifted out of the Parkland region, 11.7% in 1971/72 to 5.9% in 1981/82 in favour of Winnipeg, 19.6% in 1971/72 to 27.7% in 1981/82.

The trend over the ten years seems to be that residents of a particular region are now receiving a greater percentage of their hospital care within their own region in Winnipeg hospitals.

VIII-3 INTER-REGIONAL FLOW OF HOSPITAL PATIENTS: HOSPITAL UTILIZATION BY LOCATION OF HOSPITAL AND BY RESIDENCE OF PATIENT

The data in the previous section provided two snapshots in time of the percentage of hospital care that was domestically produced within a region and the amount that was imported in the sense that residents of a region utilized hospital services in a different region. In this section the analogy is the percentage of hospital care that was domestically consumed in a particular region and the amount that was exported to residents of a different region.

Table VIII-3 illustrates the percentage of hospital services produced within a region, consumed by its residents, and the percentage that was exported or consumed by residents of other regions.

The two regions which saw major shifts in the amount of hospital services which were consumed by residents from 1971/72 to 1981/82 were the Norman region and the Parkland region.

The residents of the Norman region decreased the percentage of hospital services they consumed domestically from 79.1% to 70.3% over the ten years. The major increase took place amongst non-Manitoba residents which went from 19.4% in 1971/72 to 25.9% in 1981/82.

In the Parkland region the residents increased the percentage of hospital services consumed in their region from 75.4% in 1971/72 to 87% in 1981/82, an increase of 11.6%. This increased share displaced the residents of the Norman region who had consumed 17.8% of Parkland's hospital services in 1971/72 to 7.4% in 1981/82, a decrease of 10.4 percentage points.

Over the ten years, each region, with the exception of the Norman region, saw more of its hospital care being consumed by its residents rather than by the residents of other regions.

VIII-4 AVERAGE LENGTH OF STAY BY RESIDENCE OF PATIENT AND BY LOCATION OF SERVICE

From Table VIII-4 it can be seen that, with the exception of the Norman region, the average length of stay for the residents of a region receiving hospital care within their own region has been increasing. There appears to be no pattern as to the changes in average length of stay of residents receiving hospital care outside their region. In some instances these have gone up and in others there has been a reduction. In some instances the number of cases involved are small which helps explain this degree of variability. The one exception to this concerns people from outside Winnipeg receiving hospital care in Winnipeg. In all

TABLE VIII-3

Percentage of Acute Care Hospital Patient Days
by Region of Service and to Region of User

Region of Patient	Region of Service							
	Central	Eastman	Interlake	Norman	Parkland	Westman	Winnipeg	Out of Province
Central								
1971/72	90.5	1.6	0.1	0.1	1.3	2.6	4.2	3.4
1981/82	93.0	0.8	0.1	0.6	0.2	1.9	3.8	5.0
Eastman								
1971/72	2.6	88.7	4.4	0.1	0.1	0.2	4.2	9.3
1981/82	1.0	90.8	2.6	0.1	0.1	0.0	4.0	8.0
Interlake								
1971/72	0.1	1.2	88.0	0.1	0.2	0.2	3.8	4.0
1981/82	0.2	1.4	89.2	0.2	0.4	0.0	4.1	3.6
Norman								
1971/72	1.4	4.4	2.9	79.1	17.8	0.5	2.6	11.6
1981/82	0.1	2.2	1.8	70.3	7.4	0.1	2.4	7.1
Parkland								
1971/72	0.9	0.1	0.1	0.3	75.4	6.5	1.9	6.0
1981/82	0.6	0.0	0.2	0.7	87.0	4.4	1.7	11.5
Westman								
1971/72	2.1	0.2	0.6	0.2	1.9	87.2	3.2	15.5
1981/82	2.3	0.1	0.4	0.5	1.4	90.6	2.4	14.0
Winnipeg								
1971/72	1.1	2.7	3.1	0.7	0.8	0.8	75.0	50.2
1981/82	2.0	3.9	4.8	1.6	1.9	1.1	77.2	50.2
Non-resident								
1971/72	1.2	1.2	0.7	19.4	2.6	2.1	5.0	0.0
1981/82	0.8	0.8	0.7	25.9	1.6	1.8	4.4	0.7
Manitoba								
1971/72	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1981/82	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Manitoba Health Services Commission.

TABLE VIII-4

Average Length of Stay by Region of User
and by Location of Service
Age-sex Adjusted Using Manitoba Health Services Commission Population Data

Region of Patient				Region of Service				
	Central	Eastman	Interlake	Norman	Parkland	Westman	Winnipeg	Out of Province
Central								
1971/72	6.6	5.2	3.8	5.2	6.9	6.1	11.0	5.7
1981/82	7.7	4.4	4.3	23.8	3.3	9.6	9.4	6.8
Eastman								
1971/72	6.6	5.2	6.0	4.3	3.9	5.8	10.2	8.4
1981/82	5.6	6.0	5.9	2.7	4.1	2.8	8.7	6.7
Interlake								
1971/72	4.3	5.8	5.4	4.0	5.1	9.9	10.1	8.0
1981/82	4.2	5.8	7.3	4.9	12.3	3.5	9.6	6.2
Norman								
1971/72	7.1	5.7	4.4	6.5	6.9	5.5	13.3	7.0
1981/82	2.9	3.8	6.4	5.3	5.8	3.7	10.9	6.5
Parkland								
1971/72	5.4	4.4	3.9	5.1	6.4	6.4	13.0	9.0
1981/82	4.1	1.7	4.2	5.0	7.6	7.1	11.5	6.5
Westman								
1971/72	6.4	4.6	5.5	5.8	6.8	6.8	12.5	6.8
1981/82	8.9	4.1	13.2	4.5	6.0	9.0	11.3	6.3
Winnipeg								
1971/72	4.4	4.4	4.7	4.4	5.0	5.5	8.5	7.4
1981/82	7.1	7.1	5.8	4.7	5.6	8.9	10.6	7.0
Non-resident								
1971/72	5.4	4.8	4.4	9.3	6.0	6.5	12.3	0.0
1981/82	4.1	3.2	4.6	7.4	5.6	5.7	11.3	5.5
Manitoba								
1971/72	6.9	5.2	5.3	6.8	6.4	6.7	9.1	7.3
1981/82	7.6	5.8	7.0	5.6	7.2	8.7	10.4	6.7

Source: Manitoba Health Services Commission

instances the average length of stay of these patients has dropped by 5.0% to 18.0% from 1971/72 to 1981/82.

Winnipeg residents receiving hospital care in Winnipeg have shown an increase in average length of stay from 8.5 days in 1971/72 to 10.6 days in 1981/82, an increase of 24.7%. The most interesting phenomenon, however, is the fact that in 1971/72 people from outside Winnipeg had an average length of stay in Winnipeg hospitals which was longer than that of Winnipeggers. Average length of stay was anywhere from 18.8% to 56.5% longer than that of Winnipeggers.

In 1971/72 patients from outside of Winnipeg hospitalized in Winnipeg had an average length of stay which was 19% to 57% higher than the 8.5 days stay of Winnipeg residents. By 1981/82, however, the average length of stay of Winnipeg residents had increased by 25% to 10.6 days stay and the average length of stay of patients from outside of Winnipeg had fallen by 5% to 18%. Therefore, the difference in the average length of stay of patients in Winnipeg hospitals who were from outside of Winnipeg, and those from Winnipeg, diminished over the ten years, mainly due to the increase in the average length of stay of Winnipeg residents, and partly due to a drop in the average length of stay of patients from outside of Winnipeg.

If a trend exists it appears that over the ten years residents of a region seeking hospital care within their region have shown an increase in their average length of stay whereas if they received care in Winnipeg their average length of stay fell. This increase in average length of stay is partly due to an increase in the number of patients staying in hospital longer than 60 days in 1981/82 compared to 1971/72.

Perhaps the most striking feature of the data reported in this Chapter is what is not shown. As Tables VIII-2 and VIII-3 indicate, there has been relatively little change over the decade in the inter-regional flow of hospital in-patients in Manitoba. As reported in Chapters V and VI, there have been very large changes in physician supply, both in total and in particular regions. And as Table VIII-2 indicates, drops of per capita utilization rates of 10-20% have occurred in four of the eight regions, while Winnipeg has risen 3.2%. But the inter-regional flow patterns, proportions of a region's caseload cared for in other regions, of a region's capacity used by non-residents, remain little changed.

There are, of course, some changes. One which stands out is the apparent reciprocal shift between Norman and Parkland. As Table VIII-3 shows, Parkland residents have nearly doubled the proportion of patient days "imported" from out-of-province, 6.0% to 11.5%, while Norman's proportions fell from 11.6% to 7.1%. At the same time Norman's "exported" days - days in Norman hospitals used by non-Manitobans - rose sharply, from 19.4% to 25.9%. Since both regions border Saskatchewan, it appears that an interprovincial "swap" is at work, and increasing, with Norman "exporting" more care to Saskatchewan and Parkland "importing" more.

Also striking is the shift in outflows from Norman, suggesting a change in physicians referral patterns. In 1971/72, 11.7% of patient days used by Norman residents were in Parkland hospitals, and 19.6% in Winnipeg. Ten years later the proportion going to Parkland had fallen by half, to 5.9%, and that to Winnipeg had risen to 27.7%, an almost matching increase.

Interlake residents also increased their proportionate use of Winnipeg hospitals, from 40.7% of all patient days to 47.8%. But for all other regions there was very little change, except for Brandon which reduced its "imported" share. In all regions but Norman, the percentage of "work done at home" rose or stayed the same. In general, therefore, inter-regional flows other than to Winnipeg did likewise except for Norman and Interlake. The picture is one of a general increase in regional self-sufficiency, especially in Westman, but not great magnitude of change. The external load on Winnipeg hospitals appears to have decreased somewhat, from 25.0% of days provided for non-residents in 1971/72 to 22.8% in 1981/82, but again no great change. The cross-border flows, in and out of the province, are likewise similar at the beginning and the end of the period, except for special circumstances relating to border communities.

When a comparison of rates of in-patient utilization per capita, is done across regions, certain points emerge. First, the differential in utilization rates between Winnipeg residents and all other Manitobans described in Chapter VII is no new phenomenon, indeed it was significantly greater ten years before. All regions have moved toward the provincial average over the decade, Winnipeg moving up and the others down--except for Westman (Table VIII-1). But Westman too has fallen toward the mean, if one excludes Brandon which is up a rather startling 37.4%.

This observation has two implications (at least). First, the extraordinary variation between rates of in-patient utilization in Winnipeg, and in Brandon (up 35.8% over Winnipeg in 1981/82) serve to illustrate the range which can be generated by different medical communities, each of which presumably believes that it is responding appropriately to the community's "needs". But it is difficult to avoid the inference, which is supported by an extensive array of empirical evidence from other jurisdictions, that this is a response to the level of availability of facilities in the community.

Second, Brandon is a referral community. In Chapter VII it was noted that one possible explanation for the very large difference in hospital utilization between Winnipeg and rural Manitoba might have been an "isolation factor". If distance and other factors increase the time required to get a patient to hospital in an emergency, or when his/her condition deteriorates suddenly, a certain amount of "preventive" hospitalization may be in order. This explanation was discounted because it rested on an out-of-date perception of conditions in "rural" communities. Many of these residents live in small or medium-size towns with hospital facilities much more accessible than those in Winnipeg. Moreover it was noted that Brandon, an urban area of over 35,000 people, had hospital utilization rates even higher than those of rural Manitoba.

The data in this Chapter reinforce this view. If "isolation" or geographic factors were responsible for the higher use rates in a rural area, it would be expected that Brandon would show use rates well below those of its region--indeed close to the Winnipeg rates. Ten years ago this was true of Brandon. Since then, the large increase in Brandon has pushed its hospital use far above that of Winnipeggers, or of their surrounding region, and the explanation of "isolation" is not supportable.

From the discussion in this and the preceding Chapter, the reader might draw the implication that hospital utilization rates and patterns in Winnipeg are being held as exemplary for the province as a whole. If only the rest of Manitoba could use hospital services as effectively as Winnipeggers do, think how much could be saved! But this review of regional and historical data is not intended to identify winners and losers, "good guys" and "bad guys". The more important message is the degree of flexibility, of variability, in such rates across time and regions, in communities where physicians believe that their patterns of use are appropriate. Sincere and dedicated professionals genuinely believe that they are "meeting needs" at levels of use, for comparable populations, which differ by fifty or even one hundred percent. This calls into question the validity of such perceptions, but not with the suggestion that the practitioners who hold these views are either ignorant or incompetent--quite the contrary. Rather, the exigencies of the practice setting tend to mold the perceptions of practitioners, individually and in groups, such that they not only do what they believe is right, but also come to believe what they do is right. And thus patterns of use drift apart.

In the next Chapter, evidence will be presented, both aggregate and for specific forms of hospital care, both from outside Manitoba and within it, that indicate that the Winnipeg rate of hospital utilization is not a "gold standard", and that significant reductions are possible, in particular areas, even from those rates, without threatening the health, safety, or comfort of the population served. If there is a "gold standard" test for appropriate utilization, it is presumably rooted in that principle.

CHAPTER IX

HEALTH SERVICES IN MANITOBA: A COMPARISON WITH THE UNITED STATES HEALTH MAINTENANCE ORGANIZATION MODEL

INTRODUCTION

An examination of insured medical and health facility services in Manitoba provides an interesting comparison with the United States-based Health Maintenance Organization model. A Health Maintenance Organization is a form of prepaid group health insurance where enrollees of the plan are covered for a comprehensive range of health care services. Employees, including physicians, are salaried sometimes with bonus plans, and enrollment in the plan is open once yearly with premiums assessed on an individual or family membership basis. Premiums are based on the expected yearly operating cost of the plan combined with the constraints of local market competition. Registration is not restricted by socioeconomic characteristics such as age, sex, income or ethnicity.

The Manitoba health care system and that of a Health Maintenance Organization have numerous features in common but differ markedly in the remuneration of participating physicians. This chapter will provide information on the nature of Health Maintenance Organizations will provide a comparison to the Manitoba health care system and will be discussed according to the sub-headings of historical development, enrolled populations, organization of health service delivery, organization of physician services, range of services, utilization statistics and conclusions.

HISTORICAL DEVELOPMENT OF HEALTH MAINTENANCE ORGANIZATIONS

Health Maintenance Organizations have their roots in the 1920's when there was a perceived need to organize health services to provide a wider range of health services for segments of the population in the United States of America.

The movement was concerned with the need to organize the delivery of health care to maximize efficiencies and to speed the knowledge and application of scientific and technological advances. Effects of the great depression showed clearly the need to organize health services in a manner consistent with the needs of the population. Experiments begun in the late 1920's and carried through to the 1930's saw the formation of what is referred to now as prepaid group practice health insurance programs. At one time bitterly opposed by the American Medical Association, prepaid group practice health insurance programs in the United States have now become the fastest growing health insurance program. A form of prepaid health insurance is the Health Maintenance Organization, which was aided by the passing of The Health Maintenance Organization Act by the United States Congress in 1974. This provided various incentives, including capital investment grants, to facilitate the growth of Health Maintenance Organizations as an alternate delivery system and a marketplace competitor to the fee-for-service health system.

The Health Maintenance Organization with the largest number of enrollees in the United States is the Kaiser-Permanente Medical Care Plan. Its beginnings were shaped from 1934 to 1938 in rural Southern California which saw the organization of workers employed in the building of the Grand Coulee Dam forming a prepaid group insurance plan. The Kaiser-Permanente Health Maintenance Organization is the United States' largest group practice prepayment plan serving 4.4 million members.

PARTICIPANTS

Enrollees of a Health Maintenance Organization join as individual or family members. Registration is open once each year and is not restricted to any group of individuals. Open registration is offered on a yearly basis due to the need to tie the monthly premiums to the expected expenditures of the health service plan.

Enrollees in the Health Maintenance Organization model are allowed to choose one of the many doctors participating in the plan. Each doctor has a set number of individuals or families as part of the physician panel. In the event that an enrollee makes application for the services of a particular physician and that physician is at the upper limit of the panel, the enrollee's name is put on a waiting list and at the first available opportunity is assigned to the desired physician.

Of interest is the delineation of responsibilities between the family or general practitioner and that of the specialist. Enrollees are first examined by a family physician, or in the case of a child, by a pediatrician. This assessment by a primary care provider preceeds any referral to a specialist. In some instances the enrollees are examined by a nurse clinician who, through the physician's office, is also able to refer to a specialist physician. Thus, the primary health care needs of the enrolled population are met by a family physician or by a pediatrician and the specialists in the plan are thus able and required to provide specialists' services only.

Health Maintenance Organizations generally offer a wider range of services compared to fee-for-service systems. Services in the prepaid group insurance plan include medical services, visits to out-patients clinics, not-for-admission surgery, in-patient hospitalization, and a variety of additional services negotiated between the enrollees and the sponsoring plan. In the Kaiser-Permanente Plan there is usually no co-insurance charge and where it is applicable it is usually a nominal fee of $1.00 for registration. In some plans there is a separate negotiation for co-insurance for such services as mental health counselling, given the elastic nature of the undertaking.

ORGANIZATION

The organization of a Health Maintenance Organization provides an interesting comparison with the Manitoba situation. Based on an accepted physician-to-enrollee ratio of approximately one to 900 and a history of acute bed supply of 1.5 beds per 1,000 enrollees, the system is organized to make maximum efficiencies possible. The organization is structured by way of a Board which, depending upon consumer participation, is made up of both health professionals and consumers. The Board sets policy and direction and authorizes the operating budget which is supported by way of a monthly premium system.

In Health Maintenance Organization plans controlled by consumers, such as the Puget Sound Group Health Cooperative in Seattle, Washington, physicians are not allowed to participate as Board members. They do, however, become involved in sub-committees reporting to the Board which provide professional advice. Lobbying by consumers for the introduction of midwives and nurse practitioners has resulted in their rapid introduction into Health Maintenance Organizations when compared to traditional fee-for-service systems.

One tenet of the organization is seen in the co-operative work between hospital administrators and practicing physicians. Physician representatives are elected by the practicing physicians and work in close liaison with administrative personnel. The basic philosophy includes the assumption that rational policy will be derived from mutual co-operation. In the event that this does not occur there is always recourse to senior management.

Organization of the delivery of health care services is also different in a Health Maintenance Organization versus the Manitoba system. This is evident in an examination of the organization of hospitals, not-for-admission facilities, visiting home services, and health promotion activities.

In Manitoba, hospitals are divided by categories of teaching versus general hospitals and within these segments there are sub-specialties dealing with acute, rehabilitation, and extended treatment services. Each hospital is organized to allocate beds and resources to specialties such as psychiatry, orthopedics, and pediatrics. By the very nature of this allocation of resources, there is a commitment to component parts versus a commitment to the general needs of the facility and its consumers of service. With the exception of oft-sighted spill-over of medical patients to surgical beds, there are few recorded interventions of one sub-specialty patients moving onto those wards allocated to another sub-specialty.

This contrasts markedly with the organization of a Health Maintenance Organization hospital. There, hospital beds are not allocated by sub-specialty, but are available by priorization to meet the most critical needs of the enrolled population. With the exception of pediatrics, which is often grouped in one area of the hospital and staffed by nurses experienced in caring for pediatric patients, there is no allocation of resources to sub-specialties. There is a training program for general duty nurses who deal with patients experiencing a variety of illnesses. Thus, patients are admitted to the hospital on the basis of priority, and are treated by general duty nurses, which culminates in a variety of patients mixed within any ward setting. In addition to segmenting children in one area of the hospital, this practice also applies to the critical care units.

Organization of not-for-admission facilities and services also differ markedly from the Manitoba situation. The philosophy of the Health Maintenance Organization is to gain maximum efficiencies from a system. Arguments for service expansion are not approached on the basis of the number of beds that are required to undertake the service, but rather, why this intervention need be done on an in-patient basis. This philosophy permeates the institution and is one of the reasons why the system runs on only 1.5 acute beds per 1,000 enrollees. In parallel with this attitude, is the concomitant development of out-patient and not-for-admission services. Wherever possible, medical investigation for diagnosis and treatment is done on a same day basis. This also occurs for surgical procedures where the system has developed a sophisticated network able to transfer what is traditionally done on an in-patient basis to a not-for-admission or same day surgical basis. This has not met with any recorded decrease in consumer satisfaction or incidence of complication.

In support of a limited number of acute care beds and the maximally developed not-for-admission system is a sophisticated and well developed system of delivering home visiting services. For example, women who deliver without complication have the option of returning to their home within a period of 12 hours after delivery. To support the mother and child, a nurse goes home with the pair to ensure adequate adjustment. Home visiting nurse services are provided wherever possible so that any intervention that can be done at home, and would thus decrease the pressure for out-patient and in-patient services, is provided. This approach is met with high consumer satisfaction.

In parallel with this general attitude is the commitment to health promotion activities. Health Maintenance Organizations have a vested interest in keeping their populations healthy. Anti-smoking programs, well-baby visits, hypertension clinics, and the like form the basis of a health promotion delivery system which is sophisticated in its development. Information pamphlets and research activities committed to demonstrate the efficaciousness of this approach form part of the basic nucleus of a Health Maintenance Organization.

In summary, there are remarkable differences between the organization and delivery of health care services when comparing Manitoba with a Health Maintenance Organization. The basic philosophy of delivering care in a bed-linked manner is seen to drive the Manitoba system. Almost as an after thought are proposals for the development of not-for-admission services and for home visiting services. Health promotion in Manitoba, like its sister provinces, receives remarkably little commitment in the form of operating funds. The reader is reminded of Manitoba's per capita health care funding, which has remained close to the Canadian average but which sees a consistently larger commitment to health services funding of an institutional nature.

ORGANIZATION OF PHYSICIAN SERVICES

Just as the organization of a Health Maintenance Organization differs from a fee-for-service system, so too does the organization and remuneration of physicians.

Fee-for-service remuneration is not part of any Health Maintenance Organization system. Physicians, as well as all other health plan employees, are salaried. Usually a Health Maintenance Organization plan establishes a ten step range for the remuneration of physicians depending upon both qualifications and experience. The Health Maintenance Organization physician begins practice at a salary level of less than that which can generally be expected in the fee-for-service system. However, by about the fourth year of employment, Health Maintenance Organization physicians have reached the remuneration level of their fee-for-service counterparts and in years after this point may exceed the remunerations of fee-for-service practitioners. In addition to direct remuneration, Health Maintenance Organization doctors participate in pension plans and additional non-salary benefits not realized by the fee-for-service physician. One additional benefit which is attractive in securing physician commitments is the generous allocation of time off and vacation periods.

There is one notable variation to the Health Maintenance Organization system of placing physicians on a yearly salary. That is in the contracting for physician services.

Some Health Maintenance Organization plans do not employ physicians directly, but contract for their services. Thus, negotiations are undertaken to supply all the physician services required by the Health Maintenance enrollees. On the basis of an agreed upon annual sum for physician services, the contracted group of doctors must provide all physician services at the agreed upon rate which is based on an established number of enrollees and their expected health service needs.

RANGE OF SERVICES

Manitoba citizens enjoy a range of insured health services equal to that which is provided in the other nine provinces. Compared to residents of the United States of America and other places in the world, Manitobans enjoy comprehensive health benefits at a virtually unprecedented level.

A comparison to those systems in the United States referred to as Health Maintenance Organizations often evoke comments as to the non-comparability both of the population served and the services provided. With regard to the services provided, an examination of services that are provided through the auspices of the Kaiser Permanente Health Maintenance Organization, illustrates the basic comparability of the two systems. The Kaiser-Pemanente plan situated in Oregon and similar to plans throughout the United States of America, has a fully prepaid system of providing in-hospital services, including work of physicians for medical and surgical services, the cost of operations, all related nursing, drugs, diagnostic x-ray and laboratory tests, and the like which is consistent with the Manitoba hospital-based system. With regard to out-patient services, diagnostic x-ray and laboratory tests, allergy tests, allergy treatment, therapeutic x-ray, radiation, and isotope services, are fully prepaid. A $1.00 registration charge is levied against those persons requiring visits to physicians and non-physician personnel for diagnosis, treatment, and preventive care, including physical, eye, and hearing examinations, physiotherapy and inhalation therapy, speech therapy, and occupational therapy. Most plans offer a pharmacare system comparable to Manitoba with the individual enrollees assuming some of the responsibility for payment as is the case in Manitoba. It is the responsibility of the insuring Health Maintenance Organization to provide a range of comprehensive health services for its enrollees. Services are quite similar to those offered in Manitoba, including the responsibility of the insuring plan to provide necessary health care for enrollees who are injured or who become ill outside of the geographical boundary of the health insurance system.

UTILIZATION STATISTICS

A comparison of the number of hospital days used per 1,000 enrollees of the Kaiser-Permanente Health Maintenance Organization versus the utilization of Manitoba residents is quite illuminating. From Table IX-1 it can be seen that in 1981/82 Manitobans were hospitalized at a rate of 1,780 patient days per 1,000 population. This compared with a Kaiser-Permanente program of 389 patient days per 1,000 enrollees in 1981 and 399 days in 1983. In 1983 Manitoba had a population of 1,047,000 while the Kaiser-Permanente program insured 4,340,000 individuals.

As illustrated in Table IX-1, even if certain patients are excluded from the Manitoba data, the hospital utilization rate of Manitobans is significantly greater than than of members of the Kaiser-Permanente program. If one excludes newborns, patients in extended treatment facilities, specialty hospitals and patients with a length of stay in excess of 59 days, hospital utilization is 1,074 patient days per 1,000 population. Indeed, even if all of the hospital days of patients 65 years of age and over are excluded from the numerator and the population

Table IX-1

Hospital Utilization Comparisons: Kaiser-Permanente Program and Manitoba

	Patient Days per 1,000 Population	
Kaiser-Permanente Program[1]	1981:	388
-all membership	1983:	399
-excludes newborns		
Manitoba Residents 1981/82:		
A) Total Hospitalization:[2]		1,780
-excludes mental institutions		
-excludes newborns		
B) Acute Care Hospitalization:[3]		
(i) All Age Groups		1,074
-excludes mental institutions		
-excludes newborns		
-excludes patients in extended treatment facilities and specialty hospitals		
-excludes patients with a length of stay in excess of 59 days		
(ii) Age Groups <65		740
(iii) Age Groups 65+		3,556
C) Acute Care Hospitalization:[3]		652
-exclusions as in B		
-excluding hospitalization of patients 65+		
-not excluding the population data of patients 65+		

[1] Kaiser Foundation Health Plan, Inc.

[2] Manitoba Health Services Commission Annual Statistics 1981/82 Table XIII

[3] Chapter VII - Table VII-2

denominator is left unchanged, the Manitoba hospital utilization rate is 652 patient days per 1,000 population, a level which is more than 60% higher than for the Kaiser-Permanente program.

This variance in rates is also illustrated when a comparison is made of the number of visits to a physician's office made by an enrollee of a Health Maintenance Organization within a calendar year. Members of the Kaiser-Permanente Plan visit a physician's office for medical services on an average of 3.2 times per year. This compares with a Manitoba average of 4.4* visits. Thus, the rates at which Manitobans are both hospitalized and receive physician services, are in excess of those rates registered by enrollees in the Kaiser-Permanente Health Maintenance Organization plan.

This significant variance between health care services received by Health Maintenance Organization enrollees and fee-for-service patients is true not only in a comparison between Manitoba and the Kaiser-Permanente plan but between Health Maintenance Organizations in general and their fee-for-service counterparts throughout the United States of America. Numerous economic studies were undertaken in the 1970's to compare what was considered to be similar populations. The results indicated that enrollees of the Health Maintenance Organization were hospitalized at a rate of 40% less than comparable fee-for-service groups. These reduced rates of hospitalization were estimated to reduce costs by 20% to 40%. Critics of these studies quickly pointed to the fact that the cost comparisons were drawn against non-comparable groups. It was argued that short of randomization of subjects, it was not possible to draw conclusions as to the rates of utilization and thus infer cost savings.

Such a study, based on randomized control trials has just recently been completed. This was part of a broader health insurance study undertaken by the Rand Corporation at a cost of $80,000,000 over a period of eight years--the results of which were published in the June 7, 1984 edition of the New England Journal of Medicine. By way of a brief summary, it indicated similar results to those which had been presented by earlier analysts, based on comparative groups which had not been consultations and office visits in 1982/83 and M.H.S.C. population. randomly assigned to a Health Maintenance Organization versus a fee-for-service practice system. The Health Maintenance Organization group of enrollees, which were treated by the Group Health Cooperative of Puget Sound in Seattle, Washington, used 40% less hospital days than the comparison group treated through the fee-for-service system. The cost savings indicated that those who were treated by the Group Health Cooperative Health Maintenance Organization were treated at a net cost of 25% less than the comparison fee-for-service group. It must be remembered that unlike Canada or Manitoba in particular, the residents of the United States see health services delivered within a competitive marketplace setting. A Health Maintenance Organization has a vested interest in keeping its enrollees satisfied due to the possible defection of enrollees to other plans. Suggestions of cost savings accrued because of inferior services either in quality or number have not been substantiated to date. A health service plan in the United States is in competition with alternative delivery systems. Thus, the enrollees of the Health Maintenance Organization which were involved in the eight year randomized trial consumed health services in an environment of competition.

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*Based on consultations and office visits in 1982/83 and Manitoba Health Services Commission population.

SUMMARY

Chapter IX has provided a brief description of the workings of a Health Maintenance Organization and provides an organizational and utilization comparison with that which is experienced in Manitoba. The fundamental differences between the two systems, other than the significant difference in health service consumption by the Manitoba group, lies in the organization and incentives inherent in the two plans.

In contrast to the fee-for-service system, a Health Maintenance Organization is organized to provide health services in a manner which is conducive to the introduction of change which makes more efficient use of hospital resources. An examination of organizations and incentives illustrates why such differences are evident, examples of which appear in a discussion of the organization of and commitment to early discharge and home visiting services, the movement to non-bed linked medical care, and the successful introduction of nurse practitioners and other physician assistants.

The successful discharge of patients after a hospital stay shorter than usual practice norms, is pervasive in the publications of health professionals. A classic example was the early discharge of obstetrical patients in England during the Second World War when hospital beds were desperately required for military personnel. This dramatic break in the practice-norm lengths of stay was brought about by a need to consider alternative methods of providing health services which result in greater efficiencies in the use of a scarce resource--the hospital--with no compromise to the quality of patient care. Although lengths of stay have generally dropped for procedures throughout the western world, there still remain large variances, an example of which can be found in a consideration of obstetrical practices in Manitoba versus those of a Health Maintenance Organization.

In 1982, the St. Boniface General Hospital put forth a program proposal to the Manitoba Health Services Commission to introduce an Early Discharge Program for obstetrical patients. The program, supported by some, while bitterly criticized by others, was introduced. Care to mothers and babies was carefully documented, and results showed what had been previously demonstrated in the literature. Early discharge of mothers who experience non-complicated delivery places neither mother nor baby at risk and results in numerous benefits.

To support the Health Maintenance Organization early discharge program, adequate resources were committed to provide the necessary support structure in the patient's home such that it is no longer considered innovative for obstetrical patients to be discharged home 24 hours after delivery. In addition, remuneration of health professionals is not linked to intensity of servicing or the provision of services within any particular segment of the health delivery network.

Non-bed linked medical and surgical care provide an interesting comparison between the Manitoba health care delivery system and a Health Maintenance Organization. As presented earlier, Manitobans are hospitalized for acute treatment at a rate more than twice that of age-sex adjusted enrollees of the Kaiser-Permanente Health Maintenance Organization plan. The Kaiser-Permanente, as well as other Health Maintenance Organizations, provide for more medical and surgical services on an out-patient or not-for-admission basis. In addition to being the prime reason Health Maintenance Organizations deliver comparable health services to those of a fee-for-service system at less cost, it meets with high consumer satisfaction.

Just as home visiting and not-for-admission services available to enrollees of an Health Maintenance Organization far exceed that which is available in Manitoba, so has the rate at which service substitution has occurred in the successful introduction of physician assistants into Health Maintenance Organization plans. Examples are witnessed in the introduction of midwives, nurse practitioners and paramedics.

Some Health Maintenance Organizations have introduced midwives at the demand of participating enrollees. This is seen in the experience of enrollees in the Puget Sound Group Health Cooperative in Seattle, Washington. Enrollees, who control the Board, introduced midwives with the cooperation and supervision of physicians.

This has paralleled the experience concerning the introduction of nurse practitioners and paramedics. The potential of nurse practitioners is well known in Canada, although these practitioners are universally absent from the mainstream of the delivery network. The use of paramedics is not, as these individuals were trained and utilized for service in the United States armed forces fighting in the Vietnam War. Both types of personnel are employed as providers of primary care, work with Health Maintenance Organization physicians and constitute a portion of the Health Maintenance Organization physician-to-enrollee count in a ratio of two physician assistants equivalent to one physician.

What then is the explanation for such a time lag between the two systems in the introduction of such services as early discharge, home visiting, not-for-admission and physician assistants? The answers, of course, are many and varied but are rooted in a fundamental difference in organizational philosophy, control of resources and available incentives.

In contrast to the situation in Manitoba, a Health Maintenance Organization can establish a composite philosophy and governing parameters. This is seen in the commitment to non-bed linked care as a visable contrast between the two systems. Health Maintenance Organizations, as one health service plan, control all resources including the health service personnel and the supporting capital. In Manitoba, although approximately 90% of health funding is done through one agency of government, the Manitoba Health Services Commission, this agency funds by way of global budgets, over one hundred individual health facilities, each of which is governed by an independent Board. Finally, there is a dramatic difference in the incentive structure.

Incentives work in both a positive and negative manner to affect physician practice patterns within a Health Maintenance Organization. As a prime factor, the Health Maintenance Organization physician is a vital participant in the management of the plan by way of consultation and collaboration with management. Where possible, physician access to non-bed linked service is facilitated as expeditiously as possible with the clear expectation that there is little tolerance for deviant physician behaviour measured against a norm of established efficacious service. Finally, monthly premiums are established to meet the projected annual costs of the plan with a projected surplus of 3% to 5%. Although there are recorded instances of these surpluses being allocated as a bonus to physicians or to offset premium increases in the following year, fiscal surpluses are usually allocated as equipment grants. Thus, efficiencies of practice ensure the provision of funds sufficient to purchase the most up-to-date medical and laboratory equipment available.